FOURTH ANNUAL REPORT

OF THE

DEPARTMENT OF PUBLIC HEALTH

July 1, 1920

TO

June 30, 1921

ISAAC D. RAWLINGS, M. D., Director

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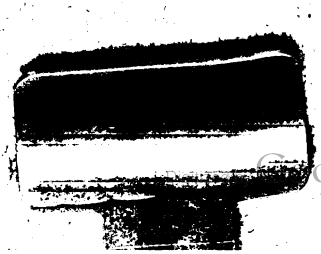

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ILLINOIS STATE JOURNAL CO.
SPRINGFIELD, ILLINOIS
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LETTER OF TRANSMITTAL.

To the Governor:

In compliance with the provisions of the Civil Administrative Code, I have the honor to submit to you the accompanying report of the Department of Public Health for the fiscal year, July 1, 1920, to June 30, 1921. The report covers briefly the activities of the various divisions of the department during the fiscal period.

Respectfully submitted,

ISAAC D. RAWLINGS, M. D., *Director.*

STATE OF ILLINOIS.

THE DEPARTMENT OF PUBLIC HEALTH.

ISAAC D. RAWLINGS, M. D., *Director.*[1]

Office of Assistant Director Vacant.[2]

AMOS SAWYER, *Chief Clerk.*

DIVISION OF COMMUNICABLE DISEASES.

JOHN J. MCSHANE, M. D., DR. P. H., *Chief.*

DIVISION OF TUBERCULOSIS.

Office of Chief Vacant.[2]

DIVISION OF SANITATION AND ENGINEERING.

HARRY F. FERGUSON, *Chief Engineer.*

DIVISION OF VITAL STATISTICS.

SHELDON L. HOWARD, *Registrar of Vital Statistics.*

DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING.

C. W. EAST, M. D., *Chief.*

DIVISION OF SURVEYS AND RURAL HYGIENE.[3]

BAXTER K. RICHARDSON, *Supervisor of Surveys.*

DIVISION OF DIAGNOSTIC LABORATORIES.

THOMAS G. HULL, M. S., PH. D., *Chief.*

DIVISION OF HOTEL AND LODGING HOUSE INSPECTION.

W. W. MCCULLOCH, *Superintendent.*

DIVISION OF PUBLIC HEALTH INSTRUCTION.

BAXTER K. RICHARDSON, *Chief.*

DIVISION OF SOCIAL HYGIENE.

G. G. TAYLOR, M. D., *Chief.*

[1] Appointed February 2, 1921.
[2] Dr. George T. Palmer, resigned March 1, 1921.
[3] Ceased to function December 1, 1920; later fused with Division of Sanitation and Engineering.

THE DEPARTMENT OF PUBLIC HEALTH.

ISAAC D. RAWLINGS, M. D., *Director.*

The fiscal year ending June 30, 1921, witnessed a number of events that carried with them distinct and pronounced influences over the State Department of Public Health. Not least among these were the inauguration of a Governor committed to a broad public health policy, a change in the directorship of the department and the additional provisions of the Fifty-second General Assembly for public health administration. Dr. Isaac D. Rawlings was appointed Director of Public Health on February 2, 1921, so that the history of the department for the year was divided almost equally under two executive officers. On March 1, the Assistant Director resigned and no new appointment had been made at the end of the fiscal year.

For the first seven months of the year the department was concerned principally with carrying out activities along lines established after the close of the World War. The new Director, however, upon his induction into office, found before him the task of executing new policies outlined in the Governor's inaugural address, as well as the continuation of activities standard in the administration of public health. The problem of handling the situation successfully was complex, embracing as it did the necessity for new legislative action and rather large increases in the personnel.

Broadly speaking, the new administration committed itself as favoring three distinct public health measures, viz: (1) The establishment of full-time medical health officers in every county of the State; (2) the strict enforcement of public health laws already enacted, particularly those relating to the prompt and complete reporting of births and cases of communicable diseases; and (3) an expansion in educational activities with special attention to training schools for home and public health nursing and schools of instruction for health officers.

Another item of no little importance that faced the new Director was the fact that the funds for purchasing antitoxin, a product which the department distributes free to citizens of the State, were completely depleted and the supply of antitoxin entirely exhausted, although the demand for this specific was unusually heavy.

LEGISLATION.

With the Fifty-second General Assembly already in session at the time of his appointment, the Director soon succeeded in securing an

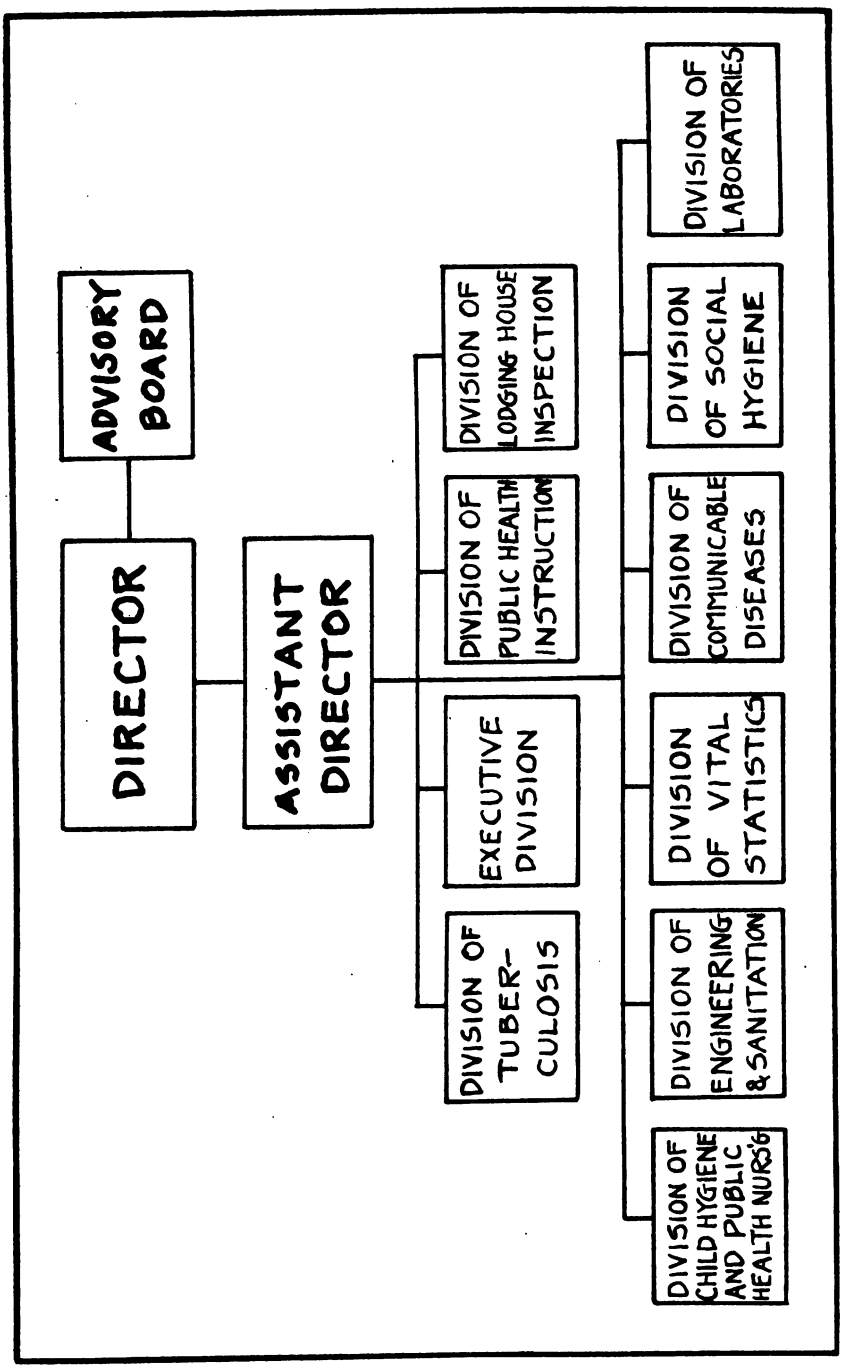

Figure I—Departmental Organization for Biennium, 1921-23.

emergency appropriation of $30,000 for the purchase of antitoxin. The wisdom of this measure was demonstrated during the remaining part of the year when diphtheria was rather unusually prevalent and almost the entire sum was expended for the purchase and distribution of antitoxin in quantities commensurate with the demand.

This emergency appropriation being disposed of efforts were made at once to secure legislative action necessary to the success of new measures for health protection. To this end a bill was drafted and a campaign launched to put upon the statute books a law providing for the employment, from State funds, of a full-time medical health officer in every county of the State. The same bill carried provision whereby counties would be authorized to employ additional personnel, establish quarters and purchase equipment necessary for a well rounded and efficient public health service. While this bill failed to be enacted, its passage in the Senate with but one dissenting vote and introduction in the House demonstrated so much favorable public opinion for an extension of public health service that a substitute budget item was embodied in the appropriation to the department. The substitute provides funds for maintaining 25 district health superintendents, or an increase of 20 over former years. This will permit a considerable extension of service and will give the people a much more satisfactory public health administration than formerly, but in no sense does it offer the possibilities for practical results that could have been obtained under the original bill. In addition to these things, the legislature set aside an increase over the last biennium of $100,000 for social hygiene service to replace a similar amount formerly provided by Federal grant. This came at a time when Federal aid for this work had been withdrawn and further progress or even the continuation of anti-venereal disease work already begun would have suffered a severe set-back without the increased appropriation. A general increase in salaries was also granted so that employees of the department will enjoy, during the next two years, incomes more justly comparable with those of the industrial world. The total appropriation to the Department of Public Health for the next biennium amounts to $1,083,759, compared with $660,610 for the last biennium. It corresponds to an annual per capita appropriation of about 8½ cents.

ENFORCEMENT OF VITAL STATISTICS LAWS.

Besides these efforts to secure the enactment of laws and needed appropriations no little time was consumed during the last five months of the fiscal year in developing practical means for enforcing the vital statistics laws and expanding the educational functions of the department. With particular emphasis on the registration of births and the reporting of communicable disease cases the Director has sought especially the cooperation of the medical profession. To this end he has delivered addresses before the State and many local medical societies, and has

held numerous conferences in Springfield and elsewhere in Illinois. At the close of the year the future is full of promise for bringing about birth registration sufficiently satisfactory to gain admission into the United States registration area for births and the probability for early success seems very reassuring.

COOPERATION.

Points of contact for cooperating with governmental and extra-governmental agencies engaged in work of a public health nature have been created or welded more firmly together. These include the powerful national organizations as well as State and local. Policies in reference to coordinating the work of some of these agencies with that of the department have been formed with the purpose of rendering in local communities a well balanced public health service free from over-emphasis of any particular task and without greater expense than many localities now bear. The proposition of cooperation has not been initiated in all cases by the department and neither has it been limited to agencies, the purpose of which is largely public health work. On the other hand the accomplishments of the department, especially in the field of child and infant care, have helped stimulate such organizations as the Shriners, International Rotary Association, various units of the Traveling Men's Protective Association, life insurance companies of national character and various women's institutions to take an active interest in these important activities. That the service of the department has attracted the cooperation and commendation of such powerful and practical organizations as these seems indeed important and worthy of mention.

EDUCATION.

More immediate results have attended the efforts of the department directed toward an expansion of educational activities. The monthly bulletin of the department has not only been converted into a popular and practical publication that has elicited the unqualified praise of physicians, public health workers and laymen alike, but it has been issued promptly each month since February. Hardly less important has been the addition to the loan service of considerable exhibit material, designed by the department and constructed under its supervision. This material consists of models and other devices that graphically portray certain fundamental principles in preventive medicine and are so constructed as to permit easy transportation from one point to another.

DEPARTMENTAL ORGANIZATION.

Within the department a number of minor but important changes have been made under the new Director. Perhaps the most far reaching of these was the innovation of weekly conferences with the division chiefs which has brought about an intra-departmental cooperation and coordination not heretofore realized. At these meetings the policy and

problems of the department are discussed and lines of action are determined. The chiefs, are, therefore, able to acquire a clear insight into the activities and problems of the department as a whole and of the various individual divisions so that vague and hazy notions are replaced by an active knowledge of purpose and policy. A weekly conference of this kind is all the more useful and necessary because the department has long since outgrown its original quarters and the several divisions are scattered throughout the Capitol Building and in the business section of Springfield.

One of the weekly conferences each month is devoted to a discussion and study of current public health literature. The periodicals for which the department subscribes (24 in number), as well as various reports and publications received through an exchange of such service, are assigned to the different division chiefs who abstract all of the more important articles. These abstracts are read and discussed at the meeting. In this way all members of the department keep informed along all lines of activities in the field of public health and are kept abreast of the times in reference to new procedures.

During the latter part of the fiscal year the adoption of a completely new set of executive regulations that govern the functioning of the department has had the effect of binding together still more closely its various units and of keeping the Director in close contact with all activities. For the purpose of convenience and efficiency a few changes in the former division organization have been made. At the close of the year the division arrangement established was as follows:

Executive Division;
Division of Communicable Diseases;
Division of Tuberculosis;
Division of Sanitation and Engineering;
Division of Vital Statistics;
Division of Child Hygiene and Public Health Nursing;
Division of Diagnostic, Biologic and Research Laboratories;
Division of Public Health Instruction;
Division of Social Hygiene;
Division of Lodging House Inspection.

Several of the divisions have not been manned to full force but the provisions of the Fifty-second General Assembly have opened the way for securing a personnel for each that will reasonably meet the requirements for work mapped out.

Even with the limited personnel the divisions in almost every case show an increase in activities over former years and some have undertaken and accomplished a great deal along new lines of endeavor. The Division of Sanitation absorbed that of surveys and rural hygiene so that all sanitary service, whether in the nature of routine or research, now comes under the supervision of the chief sanitary engineer. No

important reorganization changes have been made other than that of the executive officer and his assistant, although there were several transfers and additions in the department personnel.

RULES AND REGULATIONS FOR CONTROLLING DISEASE.

Toward the close of the year a complete revision of the rules and regulations governing the quarantine and control of communicable diseases was accomplished. A number of important changes were made so that the regulations are now in keeping with the latest and most scientific thought, while cities with well qualified and efficient health departments can enjoy a considerable amount of freedom in the matter of quarantine. While only Chicago and possibly one or two other municipalities are at present eligible to exercise the responsibilities of this modified regulation it is believed that many cities will be stimulated to qualify under the provisions required. Preparation has been made to publish the new rules and regulations in attractive pamphlet form and to supplement them with a number of special pamphlets, the material for which is ready for the printer. Public demands for educational matter of this kind have been increasingly strong and it is felt that through its widespread distribution great good can be accomplished.

A State law empowers the State Department of Registration and Education to adopt and enforce rules providing for the sanitary regulation of barber shops but prior to the adoption of such rules they must be approved by the State Department of Public Health. During the term of office of the present Director of Public Health a set of such rules, that had awaited the approval of the department for several years, were approved and are now in force.

By and large, Illinois has experienced a healthful year. No severe epidemic of serious proportions has appeared. The State has enjoyed one of the lowest mortality rates ever recorded. These things, together with the activities of the department for the year are discussed in detail in the division reports on the following pages.

EXECUTIVE DIVISION.

AMOS SAWYER, *Chief Clerk.*

The Executive Division of the State Department of Public Health is made up of the chief clerk and a staff of accountants and clerks as shown in the organization chart below. This division is charged with the general supervision of the clerical and stenographic force of all divisions and the records that pertain thereto. The status of the chief clerk is that of executive secretary of the department. In this capacity he is consulted, in the absence of the Director, by heads of divisions in reference to special important matters or emergencies requiring immediate attention. He also exercises supervision over pay rolls, accounts, contracts and other departmental records and the purchase and inventory of furniture and supplies.

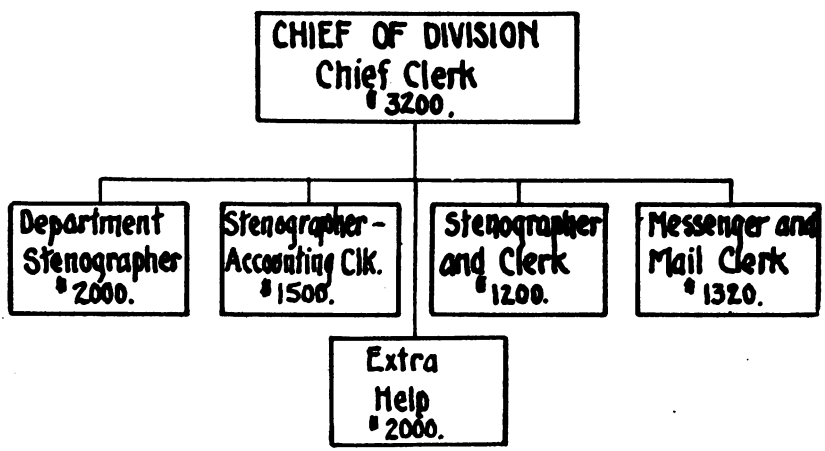

Figure II—Divisional Organization for Biennium, 1921-23.

During the fiscal year a number of unusual financial problems have presented themselves. The Fifty-first General Assembly made appropriations for several technical positions in the department that have not been filled. This is explained by the fact that unforeseen and extraordinary advances in salary scales swept the country so that the maximum salaries specified for these technical positions were not large enough to attract persons of proper qualifications and experience. The result has been that several divisions have not been able to secure the anticipated

personnel and consequently have not expanded in proportion to public demands for service. This has been especially true of the Divisions of Laboratories, Sanitation, Communicable Diseases and Child Hygiene and Public Health Nursing.

Another problem was that relating to the purchase of antitoxin for free distribution. Funds for this purpose were entirely exhausted long before the close of the year. Fortunately, however, the Fifty-second General Assembly was in session at the time and an emergency appropriation of $30,000 gave relief in this instance.

During the year a great deal of time was devoted by the Executive Division to the preparation and presentation of the department budget for the coming biennium. All divisions were required to submit estimates for the period in conformity with the probable needs in each case. On the basis of these, together with due consideration to plans for new fields of service and the probable withdrawal of Federal aid in some cases, a practical budget was compiled and presented to the Department of Finance. All items contained therein were the result of careful study and painstaking consideration.

The other work of the division during the year has been along lines established in the past. No particularly difficult problems have arisen in this respect. On several occasions, particularly in connection with the exhibit at the State Fair, the annual Better Babies Conference and the campaign during Health Promotion Week it has been necessary to engage extra help of various kinds. These matters have been attended to with dispatch and in a manner that has proved entirely satisfactory.

The routine work of the division has been kept in good shape. All accounts of the department have been recorded in the proper way and are open to inspection by authorized persons at all times. Executive orders originating from the Director have been communicated to the various members of the department and contact with other organizations and the public has been maintained in a diplomatic and satisfactory manner.

TABLE I.

FINANCIAL STATEMENT OF THE DEPARTMENT OF PUBLIC HEALTH FOR THE CLOSING BIENNIUM.

GENERAL OFFICE.

Appropriated for.	Entire appropriation for biennium July 1, 1919, to June 30, 1921.	Bills paid.	Amount lapsed Sept. 30, 1921.
Salaries and wages	$27,560	$23,958	$3,602
Salaries and wages from contingent		1,276	
Office expense	2,359	2,232	127
Office expense from contingent		176	
Travel	5,200	4,939	261
Operation	150	73	77
Operation from contingent		1,062	
Repairs	130	760	—630
Repairs from contingent		106	
Equipment	900	209	691
Equipment from contingent		1,578	
Contingent	7,200	*(4,198)	3,002
Sub-total	$43,499	$36,369	$7,130
Printing	35,000	34,087	913
Total	$78,499	$70,456	$8,043

Receipts from all sources July 1, 1919, to June 30, 1921, none.
* Not included in total.

COMMUNICABLE DISEASES.

Salaries and wages	$78,080	$66,795	$11,285
Office expense	3,892	3,762	130
Travel	28,000	23,041	4,959
Operation	220	155	65
Repairs	155	240	—85
Equipment	635	624	11
Total	$110,982	$94,617	$16,365

Receipts from all sources July 1, 1919, to June 30, 1921, $211.00.

DIAGNOSTIC LABORATORY.

Salaries and wages	$17,760	$13,153	$4,607
Office expense	1,089	913	176
Travel	1,400	382	1,018
Operation	7,063	9,509	—2,446
Repairs	534	110	424
Equipment	1,050	1,150	—100
Total	$28,896	$25,217	$3,679

Receipts from all sources July 1, 1919, to June 30, 1921, none.

TUBERCULOSIS.

Salaries and wages	$2,640		$2,640
Office expense	725	$ 658	67
Travel	4,000	1,054	2,946
Operation	20	5	15
Equipment	150	6	144
Total	$7,535	$1,723	$5,812

Receipts from all sources July 1, 1919, to June 30, 1921, none.

TABLE I—Continued.

SANITATION.

Appropriated for.	Entire appropriation for biennium July 1, 1919, to June 30, 1921.	Bills paid.	Amount lapsed Sept. 30, 1921.
Salaries and wages	$44,160	$41,788	$2,372
Office expense	2,300	2,237	63
Travel	11,000	6,402	4,598
Operation	1,840	2,263	—423
Repairs	716	565	151
Equipment	1,660	1,981	—321
Total	$61,676	$55,236	$6,440

Receipts from all sources July 1, 1919, to June 30, 1921, none.

VITAL STATISTICS.

Salaries and wages	$46,120	$45,717	$ 403
Office expense	4,120	3,949	171
Travel	9,700	6,727	2,973
Operation	15		15
Repairs	290	449	—159
Equipment	1,270	1,152	118
Total	$61,515	$57,994	$3,521

Receipts from all sources July 1, 1919, to June 30, 1921, $157.53.

LODGING HOUSE INSPECTION.

Salaries and wages	$21,000	$19,081	$1,919
Office expense	2,950	2,734	216
Travel	300	157	143
Operation	15		15
Repairs	10	1	9
Equipment	50		50
Total	$24,325	$21,973	$2,352

Receipts from all sources July 1, 1919, to June 30, 1921, $50.00.

BIOLOGICAL LABORATORY.

Salaries and wages	$16,160	$14,185	$ 1,975
Office expense	1,200	854	346
Travel	1,100	238	862
Operation	85,221	71,861	13,360
†Operation, emergency	30,000	29,912	88
Repairs	370	317	53
Equipment	1,500	966	534
Total	$135,551	$118,333	$17,218

Receipts from all sources July 1, 1919, to June 30, 1921, $289.27.
† Appropriated by the Fifty-second General Assembly.

TABLE I—Continued.

SURVEYS AND RURAL HYGIENE.

Appropriated for.	Entire appropriation for biennium July 1, 1919, to June 30, 1921.	Bills paid.	Amount lapsed Sept. 30, 1921.
Salaries and wages	$10,200	$9,931	$ 269
Office expense	250	44	206
Travel	5,500	2,724	2,776
Operation	860	452	408
Repairs	110	72	38
Equipment	480	342	138
Total	$17,400	$13,565	$3,835

Receipts from all sources July 1, 1919, to June 30, 1921. none.

PUBLIC HEALTH INSTRUCTION.

Salaries and wages	$9,440	$8,773	$667
Office expense	2,165	3,134	—969
Travel	800	672	128
Operation	506	183	323
Repairs	1,260	1,081	179
Equipment	1,260	1,488	—228
Total	$15,431	$15,331	$100

Receipts from all sources July 1, 1919, to June 30, 1921, none.

SOCIAL HYGIENE.

Salaries and wages	$30,000	$30,000	
Salaries and wages from contingent		3,925	
Salaries and wages from contingent, emergency		3,345	
Office expense	10,000	9,000	$1,000
Travel	12,000	12,000	
Travel from contingent		2,049	
Travel from contingent, emergency		392	
Operation	19,000	19,000	
Operation from contingent		9,420	
Operation from contingent, emergency		963	
Repairs	3,600	1,900	1,700
Repairs from contingent		6	
Equipment	10,000	8,000	2,000
Contingent	15,400	*(15,400)	
†Contingent, emergency	4,700	*(4,700)	
Total	$104,700	$100,000	$4,700

Receipts from all sources July 1, 1919, to June 30, 1921, none.
* Not included in total.
†Appropriated by Fifty-second General Assembly.

CHILD HYGIENE AND PUBLIC HEALTH NURSING.

Salaries and wages	$22,480	$21,522	$ 958
Salaries and wages from contingent		1,974	
Office expense	550	542	8
Office expense from contingent		367	
Travel	16,800	13,647	3,153
Travel from contingent		649	
Operation	180	46	134
Repairs	25		25
Equipment	265	254	11
Contingent	4,800	*(2,990)	1,810
Total	$45,100	$39,001	$6,099

Receipts from all sources July 1, 1919, to June 30, 1921, none.
* Not included in total.

TABLE I—Concluded.

RABIES.

Appropriated for.	Entire appropriation for biennium July 1, 1919, to June 30, 1921.	Bills paid.	Amount lapsed Sept. 30, 1921.
Salaries and wages	$4,000	$2,522	$1,478
Total	$4,000	$2,522	$1,478

Receipts from all sources July 1, 1919, to June 30, 1921, none.

SOCIAL HYGIENE (FEDERAL)

Salaries and wages	Lump sum appropriation	$56,897	
Office expense		4,023	
Travel		7,485	
Operation		24,683	
Repairs		1,020	
Equipment		5,892	
Total	$100,000	$100,000	

Receipts from all sources July 1, 1919, to June 30, 1921, none.

** RECAPITULATION.

Salaries and wages	$329,600	$297,425	$32,175
Salaries and wages from contingent		10,520	
Office expense	31,600	30,059	1,541
Office expense from contingent		543	
Travel	95,800	71,983	23,817
Travel from contingent		3,090	
Operation	145,090	133,459	11,631
Operation from contingent		11,445	
Repairs	7,200	5,495	1,705
Repairs from contingent		112	
Equipment	19,220	16,172	3,048
Equipment from contingent		1,578	
Contingent	32,100	*(27,288)	4,812
Sub-total	$660,610	$581,881	$78,729
Printing	35,000	34,087	913
Sub-total	$695,610	$615,968	$79,642
Salaries, State officers	25,200	24,000	1,200
Total	$720,810	$639,968	$80,842

Receipts from all sources July 1, 1919, to June 30, 1921, $707.80.
* Not included in total.
** Federal Social Hygiene not included in recapitulation.

DIVISION OF COMMUNICABLE DISEASES.

JOHN J. MCSHANE, M. D., DR. P. H., *Chief.*

There was a grand total of 183,457 cases of communicable diseases reported to the State Department of Public Health during the fiscal year 1920-1921. During this year the field men have been unusually busy responding to calls in different localities within their respective districts. It was impossible for the limited number of field men to give their attention to all the calls requesting their help. The reason for the unusual number of calls year after year is due in greater part to the lack of proper local health administration. One can easily understand this when one realizes that there are more than 2,752 health jurisdictions in Illinois and 1,600 of these are each under the direction of the local supervisor of a township and the remainder is made up, in round numbers, of 800 laymen and 400 physicians making a total of 2,400 laymen who are supposed to look after the health of the community they represent.

It is almost beyond belief that there are still some cities in Illinois today which have no accurate means of knowing the number of people who die each year, or the number of infants born, or whether such infants live or die, and if they die, the cause of death. This, of course, is due in part to improper registration.

It is an established fact that only through proper reporting of communicable diseases, and the proper reporting of deaths, births and marriages, that the control of communicable diseases and intensive health work can be well done in any community, for such numerical registration really forms an indispensable basis of public health work, and our chief source of such information is the practicing physician. Hence, the laxity on the part of physicians has a great deal to do with the non-control of communicable diseases. Take for instance tuberculosis and typhoid fever, where for the former there is only a modified quarantine and isolation and a modified type of quarantine in the latter, still how few cases are reported to the health department. In many cases the only reports we get from some communities are the original certificates of death. Therefore, how necessary is the cooperation of the practicing physicians. They can be of immeasurable value, or they can be an obstruction to the development and promotion of public health efficiency.

If local communities would only spend one-half the time and energy supervising scarlet fever, diphtheria, tuberculosis, summer diarrhoea, gonorrhea and syphilis that they do looking after rubbish piles and other

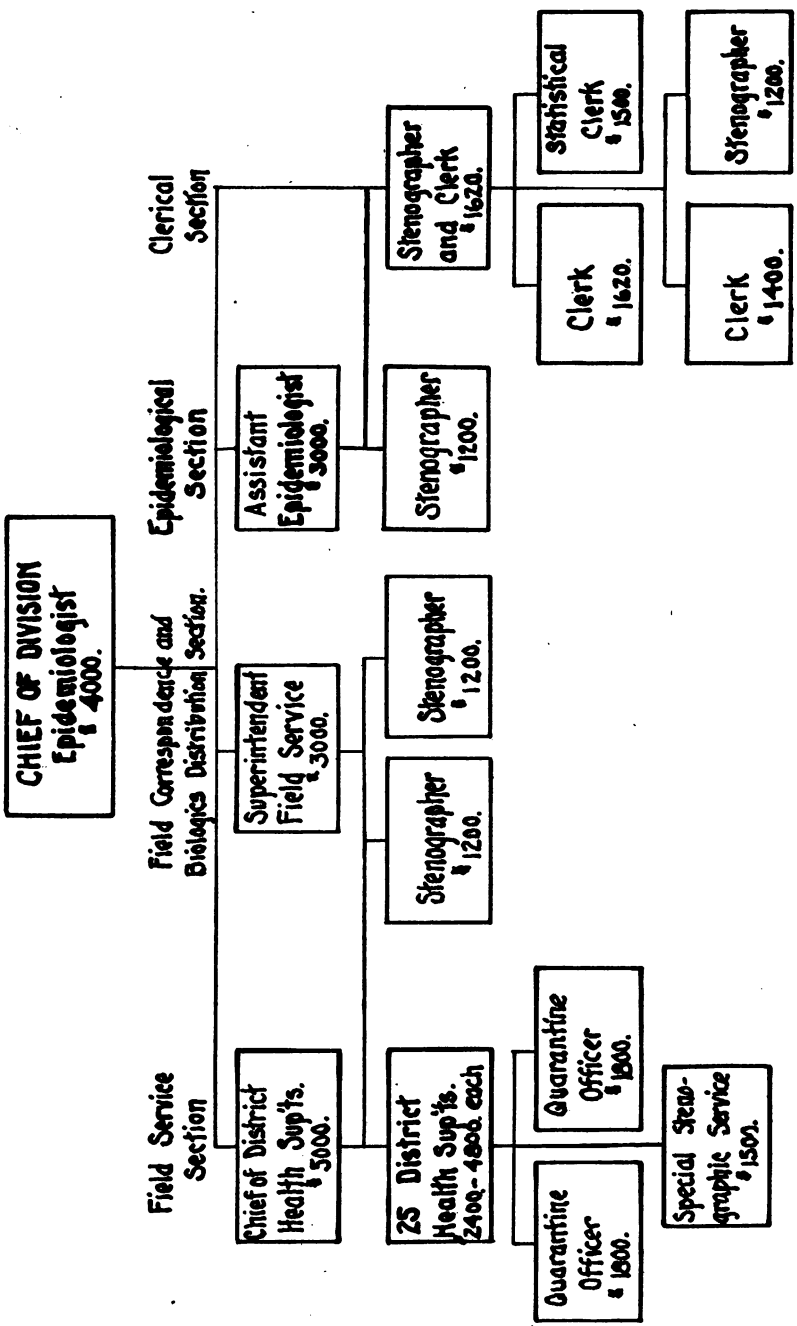

Figure III—Divisional Organization for Biennium, 1921-23.

nuisances—doing intensive work along these lines—more headway would be made in abolishing these diseases. I do not mean to say that rubbish piles and the like should not be taken care of, for we know that a clean city makes for higher ideals among its citizens, and when people have civic pride many things are accomplished that are not accomplished unless this is the case.

"Health has ever been recognized as the chief basis of wealth and happiness, and in this age is the subject of a science and administrative practice of its own." Hence, we find the Statesman Disraeli affirming that "the conservation of public health is the first duty of the statesman." It was thought in the past that only the weaklings suffered from infection or communicable diseases. If this were true, disease long ago would have taken such a toll that only those of physical perfection would be left, but we know this is not true for in our armies men who pass the most rigid examinations and are specimens of physical perfection succumb to pneumonia, meningitis and other communicable diseases.

As has been said modern public health recognizes that health means much more than the mere absence of disease, and under hygiene includes all measures taken to secure the best internal workings of the human frame to keep it at its best, thus eliminating the internal poisonings and the results of deprivations and excesses which produce certain diseases and disabilities. Public health recognizes further that surroundings, through direct action on the body, whether perfect or imperfect, may injure or destroy it, and under sanitation strives to provide surroundings which may eliminate external conditions leading to disease or injury.

The chief advance in public health of recent years is that which recognizes specifically the cause and effect, both in hygiene and sanitation, and meets each separate source or cause of each such trouble with a specific measure to prevent it. As has been said by Dr. H. W. Hill the old public health was concerned with the environment; the new is concerned with the individual. The old sought the sources of infectious diseases in the surroundings of the man; the new finds them in the man himself. The old sought the sources in every place except where they really are. The new seeks these sources and finds them in persons or animals carrying infection, whose dejecta or other discharges enter the body of other persons. The old public health was continually looking for the sources in bad smells, stagnant water, smoke, garbage, sewer gas, defective plumbing, old rubbish piles, and these in times gone by were supposed to be the starting point of epidemics.

More than once have I been told that the patient contracted typhoid fever from eating fruit or vegetables that had been stored in a damp cellar, or possibly from sewer gas, etc., and a case of scarlet fever came from some clothes that had not been fumigated months or years before; that malaria came from dampness.

The new public health today sees in the garbage pail and the manure pile a place for flies to breed, which carry infection if their bodies are contaminated with discharges from persons suffering from communicable diseases.

In swamps it sees a place for the malaria and yellow fever mosquito to breed, for we know that both malaria and yellow fever are transmitted by the bite of the mosquito.

In the past if there was only one employee in the health department he must be a sanitary inspector who condemned everything in sight and in most cases these were secondary in importance to the very things that should have been corrected. The average sanitary inspector will make great complaint and cry about garbage and the like not being properly cared for, yet pays no attention as to whether the milk man is delivering milk containing typhoid germs, or milk infected with scarlet fever; that often is his last thought, if he has one at all on the subject.

The modern trained public health official cares nothing, so far as the restriction of disease and death is concerned, for the dirty back yard or the damp cellar in themselves, but only in so far as these enter into the transmission of infected discharges. Then, at once, they become vitally important. The sanitary inspection of the modern sanitarian, so far as it relates to infection, begins and usually ends with a search for (a) the infected individual, (b) the routes of spread of infection from that individual, (c) the routes of spread of the ordinary excreta of ordinary uninfected individuals to the mouths of their ordinary associates in ordinary life.

Dr. H. W. Hill says the most important group of duties falling to the health authorities is that under the head of communicable diseases. I will use Rosenau's classification:

1. Diseases spread largely through secretions or discharges from the nose, throat and mouth.
2. Diseases spread largely through the excreta.
3. Diseases spread by insects and vermin.
4. Diseases having specific preventive measures.
5. Miscellaneous diseases.

As Dr. Hill says, infective or communicable diseases are infectious or communicable because they are due to the growth, in the body of minute animal or vegetable forms (germs), the transmissibility of these germs from body to body being the sole explanation of why diseases are catching.

Wherever germs develop in the body they leave it chiefly in the discharges or by routes of discharges such as the nose and throat, bladder or bowel, i. e., from the main orifices of the body. I might qualify this statement and say that smallpox, leprosy, syphilis and some forms of tuberculosis are transferred from skin lesions. Certain tropical diseases are transferred by insects tapping the blood stream.

The discharges infect practically any person, when that person takes the discharges in some form into the mouth or nose, except in trachoma and venereal diseases.

Modern public health recognizes therefore that most of the communicable diseases are derived directly from infected persons and not so much from infected things, except recently infected water, milk, food or flies.

The routes by which the discharges of the sick person pass to the well person are exactly those by which the same discharges pass from the well person to the well person in ordinary life. For nose and mouth discharges, the routes are mouth spray and sputum, conveyed through direct contact (as kissing, etc.). For bowel and bladder discharges the hands form the route. These become infected and in turn, either directly or indirectly, infect matter that finds its way to the mouth. Water supplies are peculiar because bowel and bladder discharges en-masse, in form of sewage, often enter them directly, at times being deliberately poured into them.

The relative importance of those various routes in the carriage of infection varies much. The amount and freshness of the discharges, the number and virulence of the germs which they contain, the size and frequency of the dose, and the number of susceptible persons who are dosed, must always be considered. Almost all the infectious disease germs die out quickly when exposed to direct sunlight, and fairly rapidly in diffused sunlight. Hence, as a rule, things succeed in conveying infection only somewhat directly from the infector to the infectee, and practically only during the limited period when the germs are still fresh and moist.

These new principles place at the head of official public health activities the search for, and the supervision of infected persons, and the control of infected discharges for the purpose of excluding them from the mouths and also from food and drink.

In Illinois we will never have proper health administration until we can cut down the 2,752 health jurisdictions into a workable number of districts with a full-time medical health officer and qualified assistant personnel to look after the preventive work in each.

In the last session of the legislature a full-time county health officer bill was offered by the department and passed by the Senate with only one dissenting vote but it unfortunately died in the committee of the House. Had this bill been passed it would have been a great stride toward giving all communities in the State proper health administration which they lack at the present time. The Director of the State Department of Public Health, knowing the need of a great many communities in the State, decided something must be done to prevent, in part, the needless waste of human lives and was successful in having appropriations made for twenty additional full-time district health superintendents. The State will be divided into districts. Each district will be served by a full-time district health superintendent who will give his

whole time to the work of supervising the public health work in his respective district.

TABLE 2—MORBIDITY AND MORTALITY FOR PREVENTABLE DISEASES REPORTED FOR PERIOD 1917-1921. (Fiscal years).

	1917-1918		1918-1919		1919-1920		1920-1921	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	1,963	581	1,199	462	2,293	386	1,787	370
Malaria	1,996	115	199	77	2,011	107	1,365	76
Smallpox	4,575	15	3,028	9	7,807	8	10,928	29
Measles	29,191	351	19,165	276	33,535	429	33,676	353
Scarlet fever	5,804	251	4,140	162	16,810	324	19,765	361
Whooping cough	14,306	708	7,214	424	13,275	444	16,165	549
Diphtheria	11,069	1,527	7,789	978	12,876	1,061	16,764	1,243
Influenza			284,142	22,207	170,954	5,661	3,056	597
Tuberculosis (all forms)	19,703	8,402	15,909	7,820	18,286	6,741	13,265	5,594
Meningitis epidemic	531	240	171	92	272	95	193	63
Poliomyelitis	867	328	265	120	364	101	303	66
Pneumonia	5,458	8,277	20,097	13,626	18,276	8,118	8,976	4,948

TYPHOID FEVER.

During the fiscal year there were reported 1,787 cases of typhoid fever as compared with 2,293 for 1919-1920; 1,199 for 1918-1919 and 1,963 for 1917-1918. For the year 1920-1921 there were reported 370 deaths from this disease against 386 for 1919-1920; 462 for 1918-1919 and 581 for 1917-1918. As will be noted from the number of deaths compared with the number of cases for the different years, all typhoid fever cases were not reported. It is indeed gratifying to note the reduction in deaths from typhoid fever during the past four years; each year there being a decrease from the previous one. During the year the district health officers in their typhoid investigations discovered a number of carriers.

Three rather severe epidemics of typhoid fever occurred during July, August and September of the last fiscal year. The first, which resulted in about seventy-five cases and a number of deaths, occurred at Fountain Green. This epidemic dates, it appears, from a church ice cream supper which was held July 2. On this occasion ice cream was served from four different freezers, one of which contained chocolate ice cream. All persons subsequently developing a continued fever resembling typhoid fever or paratyphoid fever symptomatically, ate of the chocolate ice cream while none of those partaking exclusively of the plain cream became ill. All other probable sources of infection were excluded because of the lack of anything in common to all patients. Later investigation showed that there was a carrier among the personnel of the dairy supplying the milk used in making the chocolate ice cream. Circumstantially this carrier appears to have been the source of infection. It is unfortunate, however, that more complete work could not have been done by the field worker and the laboratory since it appears that there

may have been a double source of infection, possibly not suspected at the time of investigation.

The second epidemic of typhoid fever referred to occurred at Tuscola. The outstanding fact in this epidemic was the large proportion of secondary cases, there having been about three secondary cases to each primary one. The investigator reported that the town of Tuscola and the surrounding country is low-lying territory with sanitary conditions very bad. He further stated that this community had an outbreak of typhoid fever, consisting of some 130 cases, four years before, and that a few cases had occurred each summer since the time of that epidemic. It was concluded after careful investigation that multiple well infection, probably emanating from carriers of typhoid bacillus, was responsible for the primary cases in this epidemic, the secondary cases being due to the lack of proper care of the patients and the disposal of their excreta.

The third epidemic occurred in White County during July with about sixty cases of typhoid fever, of which about fifteen cases were reported from Carmi. Investigation proved that the outbreak was waterborne.

In the spring of 1921 typhoid fever occurred in Charleston and the cases were traced to a carrier.

TYPHOID FEVER (Calendar years).

	1916	1917	1918	1919	1920
January	210	108	55	33	124
February	310	180	89	33	80
March	319	110	82	39	88
April	118	211	55	47	115
May	219	93	52	32	103
June	238	68	51	64	138
July	327	186	212	265	162
August	577	405	241	294	211
September	547	637	286	306	284
October	413	193	102	346	257
November	374	193	24	251	198
December	139	94	86	183	109
Total	3,791	2,478	1,335	1,893	1,869

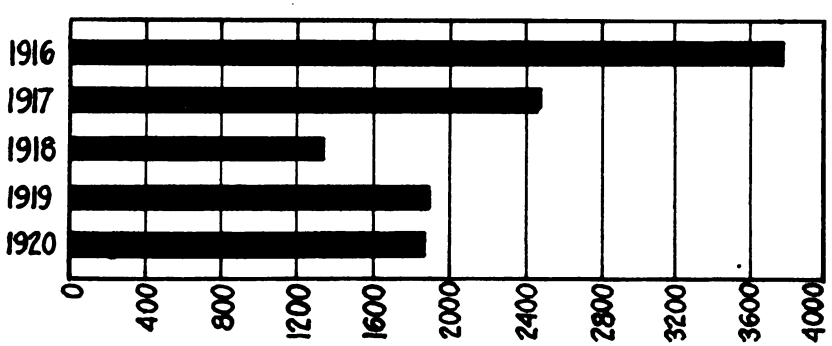

Figure IV—Reported Cases of Typhoid Fever.

TYPHOID FEVER.
(Morbidity, Mortality and Fatality Rates.)

Fiscal year.	Population.	Cases.	Deaths.	Morbidity rate (per 100,000).	Mortality rate (per 100,000).	U. S. Mortality.	Fatality rate (percent reported cases).
1917-18	6,310,856	1,963	581	33.1	9.2	12.5	27.7
1918-19	6,398,068	1,199	462	18.7	7.1	9.2	38.1
1919-20	6,485,280	2,293	386	35.3	5.9	7.8	16.8
1920-21	6,572,492	1,787	370	27.1	5.6		20.7

MALARIA.

In checking over the morbidity reports for the past four years we note that in 1920-1921 there were 1,365 cases of malaria reported with 76 deaths; 2,011 cases reported for 1919-1920 with 107 deaths; 199 cases for 1918-1919 with 77 deaths and 1,996 cases for 1917-1918 with 115 deaths.

It has been found that the mortality rate if compared with the case rate is about one to every three hundred. In figuring a ratio of cases as per death reports it will be noted that for the year 1920-1921 there should have been reported 22,800 cases; for 1919-1920, 32,100 cases; for 1918-1919, 22,100 cases; and for 1917-1918, 44,500 cases.

In checking over the mortality rate from the different counties in Illinois it is found that seventy deaths from malaria occurred in a small group of counties in southern Illinois. From the above statistics it will be readily seen that southern Illinois has entirely too many cases of malaria and only a very small proportion of the cases are reported.

The counties reporting the largest number of cases are as follows: Bureau, 70; Clay, 18; Clinton, 139; Jackson, 29; Franklin, 118; Gallatin, 17; Hardin, 13; McLean, 78; Pike, 66; Pulaski, 70; Saline, 59; Williamson, 64; Union, 186.

SMALLPOX.

During the past year there were reported to the Illinois Department of Public Health 10,928 cases of smallpox, the largest number that has ever been reported in one year in this State. It is surely a sad commentary on local public health administration in this great State of ours when smallpox is prevalent in such proportions as has been noted above.

The above number of reported cases does not represent the actual number of cases that occurred during the year, as subsequent cases occurring after the original cases on the premises many times are not reported. Smallpox will continue to occur until such time as the people of Illinois awaken and realize that to be protected against smallpox one must be successfully vaccinated. If all the children were vaccinated at the beginning of their school life it would only be a short time until smallpox would be wiped out of our State. One can easily understand how smallpox can get a foothold in a community when in many com-

munities less than 10 per cent of the population is protected by vaccination.

During the past year the district health officers investigated over one hundred and two outbreaks of smallpox. The largest outbreaks occurred in the following named places. The figures indicate the number of cases reported in each case: East St. Louis, 503; Streator, 80; Ottawa, 106; Freeport, 129; Plainfield, 50; Cooksville, 34; Moline, 72; Rock Island, 102; Rockford, 521; Jackson County 402, of which 107 were reported from Murphysboro; McLean County 410, of which Bloomington had 158 and Williamson County 619.

SMALLPOX.
(Calendar years.)

	1916	1917	1918	1919	1920
January	306	490	742	322	776
February	395	715	744	284	842
March	521	499	645	465	748
April	416	653	557	567	1,063
May	402	826	571	554	1,232
June	241	401	189	442	909
July	123	312	103	183	383
August	15	114	73	135	212
September	32	146	26	232	198
October	196	168	42	260	326
November	339	93	36	648	553
December	399	292	114	779	1,294
Total	3,385	4,709	3,842	4,871	8,536

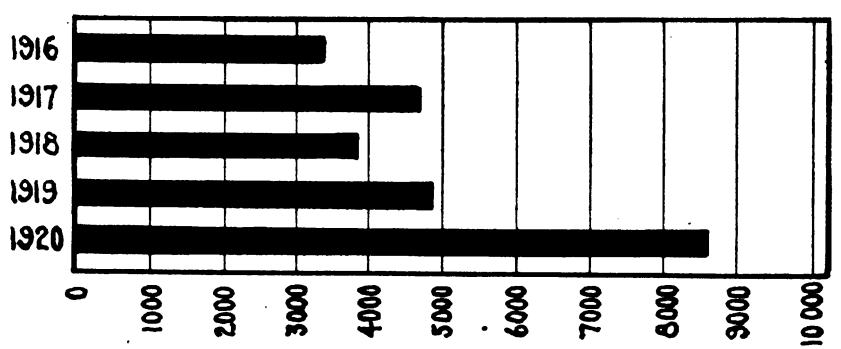

Figure V—Reported Cases of Smallpox.

SMALLPOX.
(Morbidity, mortality and fatality rates.)

Fiscal years.	Population.	Cases.	Deaths.	Morbidity rate (per 100,000).	Mortality rate (per 100,000).	Fatality rate (percent reported cases).
1917-18	6,310,856	4,575	15	72.4	0.2	0.3
1918-19	6,398,068	3,028	9	47.3	0.1	0.2
1919-20	6,485,280	7,807	8	120.3	0.1	0.1
1920-21	6,572,492	10,928	29	166.2	0.4	0.9

MEASLES.

For the fiscal year ending June 30, 1921, there were reported to this department 33,676 cases of measles against 33,535 for 1919-1920; 19,165 for 1918-1919; 29,191 for 1917-1918 and 49,945 for 1916-1917. The deaths for the same period were as follows: 353, 1920-1921; 429, 1919-1920; 276, 1918-1919, and 351, 1917-1918.

During the past five years the greatest number of cases occurred during 1916-1917 when 49,945 cases were reported. The year 1920-1921 ranks second with 33,676 reported cases. Owing to the fact that in many cases of measles no physician is in attendance and hence the case is not reported, these figures do not represent the actual number of cases occurring.

Possibly the largest epidemics of measles during the year were as follows: Bloomington with 765 reported cases; Elgin reporting 840 cases, and Quincy reporting 484 cases.

MEASLES.
(Calendar years).

	1916	1917	1918	1919	1920
January	1,556	4,634	1,150	711	4,366
February	2,943	6,464	939	1,072	4,610
March	6,403	10,740	1,237	2,453	4,982
April	6,246	10,334	1,278	5,754	5,343
May	5,393	10,140	1,501	5,204	5,542
June	3,176	4,505	641	3,142	4,434
July	1,403	1,331	273	753	1,573
August	355	312	121	153	542
September	194	189	56	101	233
October	345	122	141	270	510
November	969	389	67	536	1,280
December	2,353	417	171	757	1,985
Total	31,336	49,577	7,575	20,906	35,400

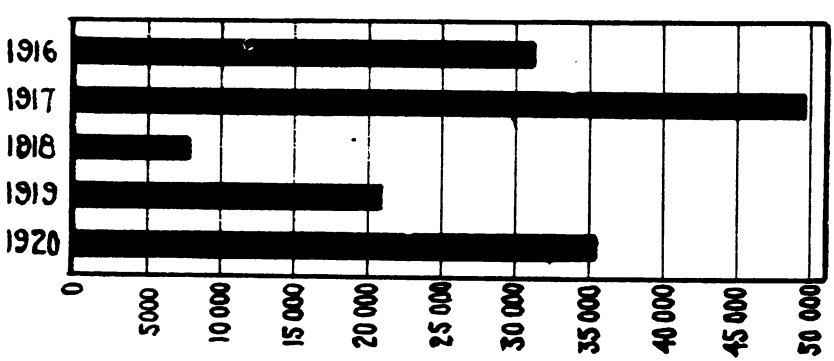

Figure VI—Reported Cases of Measles.

MEASLES.
(Morbidity, mortality and fatality rates.)

Fiscal years.	Population.	Cases.	Deaths.	Morbidity rate (per 100,000).	Mortality rate (per 100,000).	U. S. mortality rate.	Fatality rate (percent reported cases).
1917-18	6,310,856	29,191	351	462.5	5.5	10.8	3.6
1918-19	6,398,068	19,165	276	299.5	4.4	3.9	1.4
1919-20	6,485,280	33,535	429	517.1	6.6	8.8	1.3
1920-21	6,572,492	33,676	353	512.4	5.5	----------	1.0

SCARLET FEVER.

A total number of 19,765 cases of scarlet fever was reported with 361 deaths for 1920-1921; 16,810 cases with 324 deaths for 1919-1920; 4,140 cases with 162 deaths for 1918-1919; 5,804 cases with 251 deaths for 1917-1918, and 27,534 cases for 1916-1917. Commencing with the opening of the public schools in September, 1920, there was an unusually rapid increase in the number of cases, ranging from 715 cases in September to the highest point of 3,116 cases in January. Many of the cases were quite mild and as a result the physicians were not called and many cases were not reported.

During the year there were a number of large outbreaks of which the largest was in Springfield, during the winter and spring of 1921. There were 1,040 cases reported, the majority of which were of a mild type.

Scarlet fever was epidemic in Galva for a number of months, the most severe outbreak occurring during the months of April, May and June when 86 cases were reported.

SCARLET FEVER.
(Calendar years.)

	1916	1917	1918	1919	1920
January	1,878	2,284	758	440	2,449
February	1,891	2,625	611	588	2,235
March	2,281	3,403	561	662	2,335
April	1,564	2,488	505	586	1,708
May	1,547	2,230	362	495	1,456
June	893	1,329	148	289	862
July	416	699	150	99	429
August	239	351	101	97	293
September	488	528	231	304	715
October	933	401	189	656	1,385
November	1,264	232	201	893	1,972
December	1,682	648	208	1,101	2,637
Total	15,076	17,220	4,025	6,210	18,476

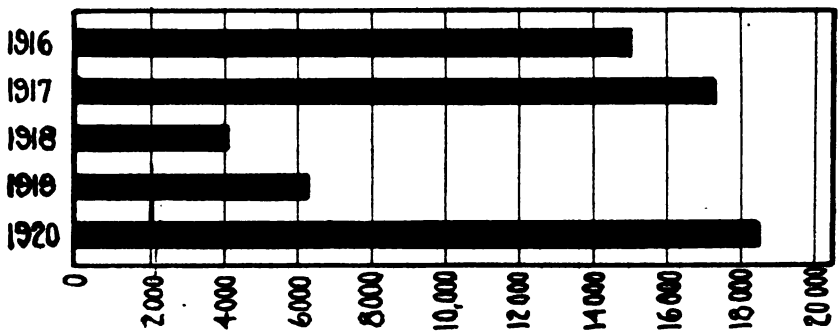

Figure VII—Reported Cases of Scarlet Fever.

SCARLET FEVER.
(Morbidity, mortality and fatality rates.)

Fiscal years.	Population.	Cases.	Deaths.	Morbidity rate (per 100,000).	Mortality rate (per 100,000).	U. S. mortality rate.	Fatality rate (per cent reported cases).
1917-18	6,310,856	5,804	251	91.4	3.9	3.0	4.3
1918-19	6,398,068	4,140	162	64.7	2.5	2.8	3.9
1919-20	6,485,280	16,810	324	259.2	4.9	4.6	1.9
1920-21	6,572,492	19,765	361	300.7	5.5		1.8

WHOOPING COUGH.

There were reported during the year 1920-1921, 16,165 cases of whooping cough with 549 deaths; for 1919-1920 there were reported 13,275 cases with 444 deaths; for 1918-1919, 7,214 cases and 424 deaths; and for 1917-1918, 14,306 cases with 708 deaths.

We do not get complete reports in either whooping cough or measles. It will be noted from the foregoing statement that whooping cough is of major importance because of the complications which follow this disease. More deaths occur from whooping cough than from typhoid fever, poliomyelitis, and epidemic meningitis. The highest mortality was reached in 1917-1918 when there occurred 708 deaths. Unfortunately, it is considered one of the so-called minor diseases of childhood by the laity.

DIPHTHERIA.

During the year 1920-1921 there were reported to the State Department of Public Health 16,764 cases of diphtheria with 1,243 deaths. For the year 1919-1920 there were reported 12,876 cases and 1,061 deaths; in 1918-1919, 7,789 cases and 978 deaths; for 1917-1918, 11,069 cases and 1,527 deaths; and for the year 1916-1917, 13,716 cases.

During the past four fiscal years the average number of deaths per year was about 1,200, the morbidity averaging about ten times as great as the mortality. During the pre-antitoxin days the mortality ran 40

per cent of the cases, but with the introduction of antitoxin it has been reduced to about 10 per cent. It seems like this is an unusually large number of deaths when one considers that we have at our disposal diphtheria antitoxin which, if given within the first 24 hours of the disease, would cure nearly every case. It is true, however, that the number of deaths for the past few years have remained more or less constant. The greatest mortality and morbidity in diphtheria is between the ages of one and five years. Over 80 per cent of the deaths occur under five years of age. Where the cause of death has been analyzed it has been found that in a great many of the cases the death was due to the non-recognition of cases and the lack of early treatment. In view of the above fact that the mortality has remained constant for a number of years it would seem that the control of diphtheria will have to be met by other means than have been used in the past.

At Mooseheart, in Illinois, more than a thousand children were immunized with toxin-antitoxin and only one case of diphtheria was reported among those immunized during the past two years. It is claimed that the active immunity produced by toxin-antitoxin lasts about five years. It is most important that children under five years be immunized with toxin-antitoxin on account of the high morbidity and mortality of children in this age group. If we can immunize 95 per cent of our children for five years by giving them toxin-antitoxin we can reduce the mortality from 60 to 80 per cent. As soon as diphtheria is clinically diagnosed antitoxin should be given without waiting for a laboratory result of nose and throat cultures.

DIPHTHERIA.
(Calendar years.)

	1916	1917	1918	1919	1920
January	973	1,263	1,028	750	878
February	810	1,072	649	687	693
March	736	1,312	751	688	850
April	559	1,124	665	644	787
May	640	1,141	565	668	761
June	643	930	566	470	662
July	471	890	487	485	600
August	525	722	362	397	520
September	797	1,212	604	751	908
October	1,564	814	990	1,589	1,913
November	1,627	2,046	703	1,628	2,544
December	1,337	1,161	705	1,207	2,261
Total	10,682	13,687	8,075	9,964	13,377

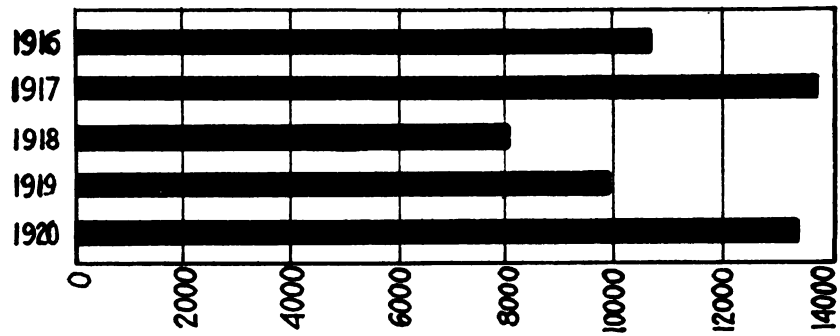

Figure VIII—Reported Cases of Diphtheria.

DIPHTHERIA.
(Morbidity, mortality and fatality rates.)

Fiscal years.	Population.	Cases.	Deaths.	Morbidity rate (per 100,000).	Mortality rate (per 100,000).	U. S. mortality rate.	Fatality rate (per cent reported cases.)
1917-18	6,310,856	11,069	1,527	175.4	24.1	8.6	13.7
1918-19	6,398,068	7,789	978	121.2	15.2	7.5	12.6
1919-20	6,485,280	12,876	1,061	198.5	16.3	15.3	8.2
1920-21	6,572,492	16,764	1,243	255.1	18.8	----------	7.4

INFLUENZA.

During the fiscal year of 1920-1921, there were reported to the State Department of Public Health 3,056 cases of influenza with 597 deaths. The largest number of cases to be reported in one month was 520 for December. The smallest numbers were 55 for July, 1920, and 63 for June, 1921. The average number of cases per month was approximately 253 cases. The following tables show the marked decreases following the pandemic of 1918-1920.

INFLUENZA.
(Fiscal years.)

	1918-1919	1919-1920	1920-1921
July	----------	272	55
August	----------	384	124
September	541	562	163
October	145,067	723	217
November	40,806	549	283
December	43,304	711	520
January	28,354	80,020	480
February	13,369	80,946	424
March	10,486	5,731	293
April	2,029	741	309
May	166	159	125
June	20	156	63
Total	284,142	170,954	3,056

RABIES.

During the past year there were reported nine cases of rabies with one death, as compared with fourteen cases with three deaths for 1919-1920.

TUBERCULOSIS.

In checking over our morbidity reports of tuberculosis we note that there were reported for the fiscal year 1916-1917, 11,106 cases; for 1917-1918, 19,703 cases with 8,402 deaths; for 1918-1919, 15,909 cases with 7,820 deaths; for 1919-1920, 18,286 cases with 6,741 deaths; and for 1920-1921, 13,265 cases with 5,594 deaths.

EPIDEMIC MENINGITIS.

During the fiscal year ending June 30, 1921, there were reported to this division 193 cases of epidemic meningitis with 63 deaths; during 1919-1920, 272 cases with 95 deaths; for 1918-1919, 171 cases with 92 deaths; and for 1917-1918, 531 cases with 240 deaths.

POLIOMYELITIS.

Within the fiscal year there were reported 303 cases of poliomyelitis with 66 deaths, being a decrease of cases and deaths as compared with the year 1919-1920, when there were 364 cases and 101 deaths. In 1918-1919, 265 cases with 120 deaths were reported, and in 1917-1918, 867 cases with 328 deaths.

POLIOMYELITIS
(Calendar years.)

	1916	1917	1918	1919	1920
January	----------	9	10	9	3
February	----------	13	4	3	5
March	----------	12	17	7	9
April	----------	17	21	4	7
May	4	6	18	13	6
June	22	12	16	12	12
July	137	27	43	77	9
August	295	128	73	101	35
September	222	373	79	70	80
October	85	213	18	28	66
November	23	39	2	29	42
December	10	9	2	17	18
Total	798	858	303	370	292

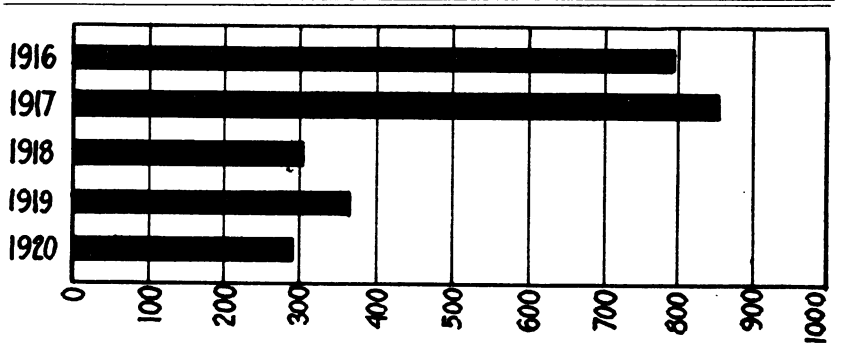

Figure IX—Reported Cases of Poliomyelitis.

POLIOMYELITIS.
(Morbidity, mortality and fatality rates.)

Fiscal years.	Population.	Cases.	Deaths.	Morbidity rate (per 100,000).	Mortality rate (per 100,000).	Fatality rate (per cent reported cases).
1917-18	6,310,856	867	328	13.8	5.3	38.6
1918-19	6,398,068	265	120	4.1	1.8	44.5
1919-20	6,485,280	364	101	5.6	1.5	27.7
1920-21	6,572,492	303	66	4.6	1.0	21.7

PNEUMONIA.

During the past year there were reported 8,976 cases of pneumonia with 4,948 deaths. The year previous, 1919-1920, there were 18,276 cases with 8,118 deaths; during 1918-1919, 20,097 cases with 13,626 deaths; and for the year 1917-1918, there were 5,458 cases with 8,277 deaths.

During the past four years the greatest number of cases of pneumonia was, of course, reported during the years when influenza was epidemic. During those years an average of 20,000 cases of pneumonia were reported against a normal year of some 9,000 cases. Of course, 9,000 does not nearly represent the actual number of cases that occur in Illinois. Deaths from pneumonia average over 8,000 each year in this State. It seems that the people do not realize the seriousness of this disease as a menace to health and its infectious nature. This disease ranks with tuberculosis as one of the principal causes of death. In one or two years it outranked tuberculosis as the cause. The number of cases of tuberculosis in comparison with the morbidity and the mortality for both diseases will be found in the tables following:

MORBIDITY TABLE.
(Fiscal years.)

	1917-1918	1918-1919	1919-1920	1920-1921
Tuberculosis	19,703	15,909	18,286	13,265
Pneumonia	5,458	20,097	18,276	8,976

MORTALITY TABLE.
(Fiscal years.)

	1917-1918	1918-1919	1919-1920	1920-1921
Tuberculosis	8,402	7,820	6,741	5,594
Pneumonia	8,277	13,626	8,118	4,948

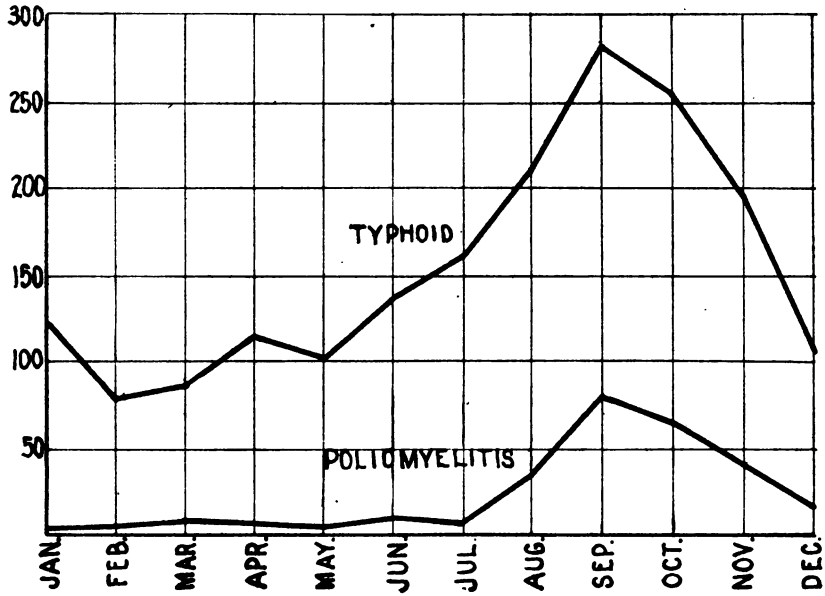

Figure X—Seasonal prevalence of diseases indicated for calendar year 1920.

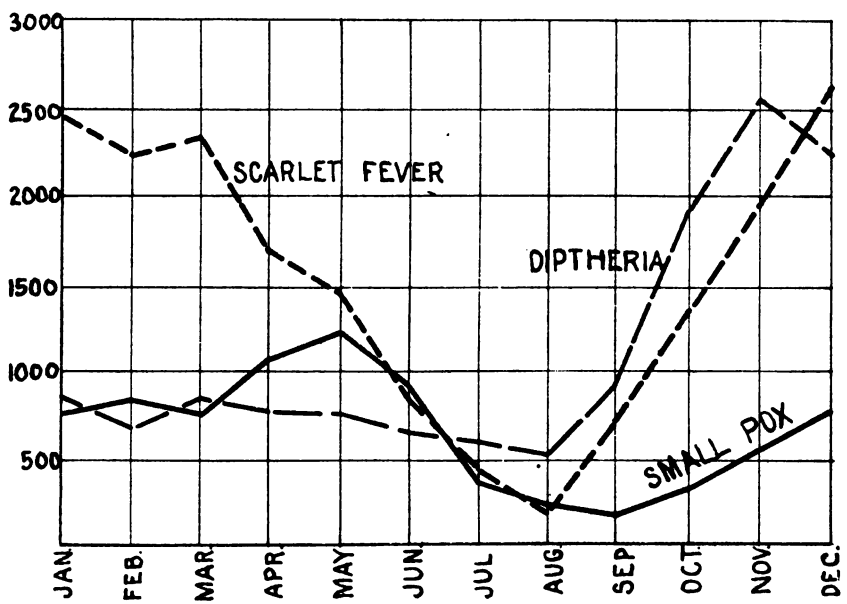

Figure XI—Seasonal prevalence of diseases indicated for calendar year 1920.

ENCEPHALITIS LETHARGICA.

This disease has been reported from all parts of the world. It was reported in Austria in the beginning of 1917; in England and France in the spring of 1918; in Italy during the following winter; in Portugal in February of 1919; in India in November, 1919; in Spain during the early part of 1920; and in the United States it appeared in the latter part of the year of 1918 in the states bordering on the Atlantic Ocean and the following October it occurred on the Pacific coast.

During the year 1920 there was reported first in Chicago a number of cases diagnosed as encephalitis lethargica, or so-called sleeping sickness. Shortly after these cases were recognized and physicians' attention called to the fact that certain clinical symptoms were indicative of encephalitis, the State Department of Health was called upon to confirm the diagnosis of encephalitis lethargica. During the year 1920 there were reported to this department in the first six months 237 cases and during the last six months seven cases. In 1921, 200 cases were reported for the first six months of the year.

When this disease first made its appearance in Illinois the State Department of Public Health promulgated a special order making cases of this disease reportable to local health authorities and subject to isolation, and further providing:

> The cases and nursing attendant must be isolated. If isolation is efficient and other inmates of premises do not come in contact with the patient or attendant or with articles coming from the sick room, such other inmates may leave the premises to attend to necessary business affairs. Isolation shall continue until such time as convalescence is established and can be terminated only by local health authorities. Premises should be placarded.

LEPROSY.

During the past year there were reported to the State Department of Public Health two cases of leprosy. The first case was a Greek, a resident of East Moline, who worked in the shops in Silvis.

The second case was reported in a man, 30 years of age, whose regular occupation was that of a dry goods salesman. He came to this country in 1912 and has been living in Chicago ever since, with the exception of the first six months of 1918, during which time he was employed as a shipping clerk in Dallas, Texas. In 1918, he entered the United States Army and served in France. He was discharged "in good health" May 28, 1919, from an engineers' company. Apparently the onset of his disease was about November, 1916. He has done no work since December, 1920. At the present time he is isolated at Cook County Hospital.

PELLAGRA.

During the year there were reported to this division thirteen cases of pellagra. Five of these cases occurred in Cook County; two were reported from the Dixon State School and Colony; two from the Alton State Hospital; two from the Kankakee State Hospital; one from the

Peoria State Hospital at Bartonville; and one from Goreville, Johnson County. No doubt there were other cases in the State that were not reported.

ANTHRAX.

Seven cases of anthrax were reported during this period of one year; one in each of the months of August, September and December, 1920, and two in each of the months of January and February, 1921. This is primarily a disease of animals and more particularly of cattle and sheep but does occasionally occur among those who work among these animals or handle hides or wools.

An investigation of the source of cases of anthrax occurring in August and September showed that the use of infected shaving brushes was responsible for these cases. All of the infected brushes belonged to one lot and were of cheap grade, made of horse hair, in imitation of "Badger" and none bore either the manufacturer's name or trade mark.

The prompt destruction of all shaving brushes sent out from this source of infection to various parts of the country undoubtedly resulted in the prevention of other cases of anthrax. The good achieved as the result of a thorough investigation of the source of infection of these cases illustrates quite well the protection which the public receives as the result of the scientific application of our knowledge regarding the cause and means of transmission of communicable diseases.

MILK SICKNESS.

Several cases of another rather uncommon disease in man in Illinois known as "milk sickness" were investigated by one of the district health officers. It appears from his report that some twenty cases of this disease had occurred in Grundy County since 1916, with one death in 1920 attributed to this disease. Other cases are known to have occurred in this same locality prior to 1916 according to another investigator detailed there by the former State Board of Health.

A number of "endemic foci" were reported in Grundy County. The disease is said to follow dry weather when cattle pasture in wooded places and always occurs in the fall of the year. The symptoms are fairly constant and consist of progressive weakness, various stomach and bowel symptoms, subnormal temperature, slow pulse and coma at times.

In order to prevent the occurrence of this disease it is recommended that the low wooded lands where the cows have access to noxious weeds be cleared of timber. This seems reasonable since the growth of weeds, thought to be responsible for the condition of milk which causes this disease in persons who drink it, is favored by shade and dampness.

TRACHOMA.

As a result of a conference called in March, 1920, by the Trachoma Committee of the Illinois Society for the Prevention of Blindness at which the Board of Welfare Commissioners of the Department of Public

Welfare was represented, it was agreed that an intensive survey of the prevalence of this disease should be made in a small area selected in southern Illinois, and that a treatment clinic should also be established. In addition to the two organizations mentioned, the Eye Department of the University of Illinois, the American Red Cross and the State Department of Public Health cooperated in the planning for and actual conduct of this work during the months of May, June and July. The main clinic was held at Mt. Vernon with plans for branch consultation clinics at Harrisburg and Benton. The following is a brief report of the medical director, Dr. E. V. L. Brown, for the first three months' work of the clinics:

MT. VERNON—MAY 10 TO JULY 26, 1920.

Attendance—first day	17
Total attendance	515
Trachoma patients	33

HARRISBURG—JUNE 29, JULY 7 and 21, 1921.

Attendance—first day	58
Total attendance	114
Trachoma patients—39 per cent	45

BENTON—JULY 23, 1920.

Attendance	85
Trachoma patients—29 per cent	12
Seen by doctor	42
Referred to next clinic	43

Mt. Vernon is a treatment clinic; does not therefore refer all cases for attention of local physicians.

Harrisburg and Benton are consultation clinics and refer all cases to attention of local physicians in consultation with clinic physician, and keep in touch with patients until they are under satisfactory care.

ANALYSIS OF DISPOSITION OF CASES IN HARRISBURG AND BENTON CLINICS.

	Harrisburg.	Benton.	Total.
Advised treatment	63	15	78
Advised refraction	22	14	36
Advised further study	2	3	5
Advised no treatment	7	5	12
Advised hospital care	1	1	*1
Referred to doctor (without examination)	7		7
Advised change of work		1	1
Advised operative treatment—			
Cataract	3	1	4
Trachoma	2		2
Pterygium	2		2
Enucleation	*1	2	3
Return for observation		1	*1
	115	43	158

* Referred to doctor also.

OCCUPATIONAL DISEASE.

The Occupational Disease Act is "An Act to promote the public health by protecting certain employees in this State from the dangers of occupational diseases, and providing for the enforcement thereof."

149. *Physical Examinations, Reports.*

Sec. 4. It is hereby made the duty of any licensed physician who shall make the physical examination of employees under the provisions of section 2 of this act, to make an immediate report thereof to the State Department of Health of the State of Illinois upon blanks to be furnished by said department upon request, and if no such disease or illness is found the physician shall so report, and if any such disease is found, the report shall state the name, address, sex and age of such employee and the name of such employer, and the nature of the disease or illness with which the employee is afflicted, and the probable extent and duration thereof, and the last place of employment: *Provided,* that the failure of any such physician to receive the blanks of the State Department of Health for the making of such report, shall not excuse such physician from making the report as herein provided.

150. *State Department of Health, Director's Duty.*

The Director of the State Department of Health shall, immediately upon receipt of any report from any physician in accordance with the provisions of section 4 of this act, transmit a copy thereof to the Illinois Department of Factory Inspection.

There are 311 firms reporting monthly the number of men examined and the diseases found. During the fiscal year 84,712 men were examined for occupational diseases and 140 cases of lead poisoning, one case of arsenic poisoning and one case of carbon monoxide poisoning were reported to this division.

THE COST OF COMMUNICABLE DISEASES.

In the past three annual reports tables were published showing the cost of communicable diseases in the different counties in the State, in which some interesting figures present themselves. The highest cost per capita, for 1920-1921, was in Union County with $52.71 and the lowest was in Monroe County where communicable diseases cost $5.98 per capita for the year.

In computing the cost of communicable disease, the following definite factors were taken into consideration and in every instance it is believed that the figures employed result in an under-statement rather than an exaggeration of the facts; cost of human life, computed at $3,000 for the adult and $500 for the child; cost of burial for the adult, $100 and $50 for the child; estimate of the number of cases of illness for each death from disease, prepared upon recognized epidemiological standards; the cost for medicine and nursing for the sick and the value of the loss of time from productive or gainful occupation. In these compilations, each disease was given careful and separate consideration and it is believed that the resultant figures state the case as clearly and accurately as it can be stated.

The total cost of communicable diseases for the year amounted to $103,933,543, or a cost per capita of $15.81 for every person in the State of Illinois. In 1919-1920, the total cost was $150,070,738 and in 1918-1919, $223,634,515. The largest reduction in cost is found in tuberculosis, pneumonia and influenza. Tuberculosis again ranks first with a grand total of $72,207,900 for 1920-1921, and $90,002,500 for 1919-1920. Pneumonia for 1920-1921 was $18,140,755 and for 1919-1920, $28,436,953. For the year 1920-1921 the cost of influenza was $1,913,094 and for the year before $18,895,551.

DISTRIBUTION OF DIPHTHERIA ANTITOXIN.

During the fiscal year just passed, the following quantities of diphtheria antitoxin were distributed:

22,539	1,000	unit packages, chiefly for preventive use.
2,445	3,000	unit packages, for individual curative use.
16,564	5,000	unit packages, for individual curative use.
16,586	10,000	unit packages, for individual curative use.
1,197	10,000	unit packages, for institutional use.
1,078	20,000	unit packages, for institutional use.
60,409		packages or 412,084,000 units.

Of 19,670 cases of diphtheria in Illinois in which reports on the administration of State antitoxin were received by the department during the past 18 months, 1,136, or 5.67 per cent died. The period in which these cases occurred, however, includes the fall of 1920 when the death rate from diphtheria was unusually small.

Of the 1,136 fatal cases, 358 were reported as of the laryngeal type. This probably is under estimated as in many instances the physicians did not report the type of disease. In 332 cases resulting fatally the day of the membrane on which antitoxin was first administered was not indicated; in 110 cases antitoxin was reported as administered on the first day of the membrane; in 180 cases on the second day; in 184 cases on the third day; in 167 cases on the fourth day; in 83 cases on the fifth day; in 45 cases on the sixth day; in 27 cases on the seventh day; in 4 cases on the eighth day; in 3 cases on the ninth day; and 1 on the tenth day.

Complications in fatal cases were reported as follows: Adenitis in 8 cases; arthritis in 1 case; broncho pneumonia in 24; endocarditis in 14; gastro enteritis in 5; influenza in 10; malnutrition in 4; measles in 8; mumps in 8; myocarditis in 36; nephritis in 51; neuritis in 9; oedema of larynx in 4; oedema of glottis in 6; post diphtheric paralysis in 22 (paralysis of larynx 7, paralysis of palate 2, paralysis of pharynx 6); pneumonia in 15; scarlet fever in 68; uremia in 13; and whooping cough in 9.

The ages of the fatal cases were as follows: Not stated, 10 cases; 1 year old, 59; 2 years, 87; 3 years, 103; 4 years, 127; 5 years, 96; 6 years, 95; 7 years, 102; 8 years, 74; 9 years, 58; 10 years, 44; 11 years, 30; 12 years, 26; 13 years, 24; 14 years, 21; 15 years, 23; 16 years, 17; 17 years, 18; 18 years, 20; 19 years, 16; 20 years, 15; 21 years, 9; 22 years, 7; 23 years, 6; 24 years, 6; 25 years, 11; 27 years, 6; 28 years, 4; 29 years, 5; 30 years, 9; 31 years, 3; 32 years, 1; 33 years, 4; 34 years, 1; 35 years, 3; 37 years, 1; 40 years, 3; 42 years, 1; 45 years, 1.

The ages of the non-fatal cases were as follows: Not stated, 441 cases; 1 year old, 392; 2 years, 825; 3 years, 1,113; 4 years, 1,170; 5 years, 1,259; 6 years, 1,367; 7 years, 1,435; 8 years, 1,082; 9 years, 984; 10 years, 1,111; 11 years, 873; 12 years, 717; 13 years, 475; 14 years, 377; 15 years, 375; 16 years, 434; 17 years, 421; 18 years, 313; 19 years, 300; 20 years, 302; 21 years, 255; 22 years, 225; 23 years, 220;

24 years, 192; 25 years, 259; 26 years, 217; 27 years, 246; 28 years, 133; 29 years, 287; 30 years, 155; 31 years, 97; 32 years, 219; 33 years, 120; 34 years, 132; 35 years, 155; 36 years, 119; 37 years, 89; 38 years, 129; 39 years, 49; 40 years, 108; 41 years, 48; 42 years, 80; 43 years, 44; 44 years, 24; 45 years, 52; 46 years, 30; 47 years, 41; 48 years, 37; 49 years, 51; 50 years, 15; 51 years, 28; 52 years, 13; 53 years, 2; 54 years, 4; 55 years, 3; 56 years, 5; 57 years, 2; 58 years, 3; 59 years, 2; 60 years, 1; 61 years, 1; 62 years, 3; 63 years, 2; 64 years, 1; 65 years, 1; 66 years, 1; 67 years, 1; 68 years, 1; 69 years, 1; 74 years, 1.

Complications in non-fatal cases were reported as follows: Adenitis in 12; albuminuria in 3; anaphylaxis in 1; arthritis in 5; broncho pneumonia in 19; chickenpox in 23; cyanosis in 3; dermatitis in 1; dyspnea in 1; endocarditis in 2; epistaxis in 3; influenza in 5; laryngeal paralysis in 7; laryngeal stenosis in 1; laryngitis in 2; laryngismus in 1; malnutrition in 1; measles in 26; mumps in 6; myocarditis in 156; nephritis in 59; neuritis in 13; otitis media in 27; partial deafness in 1; peritonsillar abscess in 33; pneumonia in 13; post diphtheric paralysis in 47 (nasal paralysis in 1, paralysis of palate in 26); scarlet fever in 937; uremia in 3; urticaria in 5; Vincent's Angina in 7; and whooping cough in 17.

TABLE 3—SHOWING THE REPORTS OF SEVENTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE ENTIRE STATE OF ILLINOIS BY MONTHS FOR THE YEARS JULY 1, 1919 TO JUNE 30, 1920 AND JULY 1, 1920 TO JUNE 30, 1921.

Diseases.	July.		August.		September.		October.		November.		December.		January.	
	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21
Typhoid fever	265	162	294	211	306	284	346	257	251	198	183	109	124	96
Malaria	417	171	294	279	265	117	170	132	97	87	63	123	59	80
Smallpox	183	383	135	212	232	198	260	326	648	553	779	1,294	776	1,900
Measles	1,110	1,573	255	542	118	233	342	510	706	1,280	1,727	1,985	4,366	3,932
Scarlet fever	211	429	188	293	579	715	1,295	1,385	1,597	1,972	1,895	2,637	2,449	3,116
Whooping cough	618	1,650	802	1,214	723	929	554	957	818	1,059	1,206	1,290	1,143	1,530
Diphtheria	541	624	528	454	992	904	1,898	1,907	2,050	2,700	1,505	2,343	1,139	1,874
Influenza	272	55	384	124	562	163	723	217	549	283	711	520	80,020	480
Rabies			1		3		3					3		4
Tuberculosis (all forms)	1,720	1,065	1,447	729	1,627	1,205	1,719	1,012	1,693	938	1,580	1,114	1,433	989
Meningitis epidemic	25	7	20	12	11	15	33	16	31	20	21	9	31	20
Poliomyelitis	77	9	101	35	70	80	28	66	29	42	17	18	3	4
Pneumonia	308	282	185	215	233	266	451	335	601	604	1,275	980	7,012	1,568
Septic sore throat	80	74	81	94	119	91	177	153	224	235	210	206	180	178
Syphilis	438	743	563	449	775	681	1,137	568	1,390	520	1,349	584	1,206	655
Gonorrhea	954	1,365	1,075	1,066	1,083	1,301	2,074	1,550	2,324	1,397	1,599	1,230	1,413	1,087
Chancroid	43	77	54	96	37	63	121	70	133	83	78	65	94	104

TABLE 3—Concluded.

Diseases.	February.		March.		April.		May.		June.		Totals.	
	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21
Typhoid fever	80	74	88	83	115	89	103	72	138	152	2,293	1,787
Malaria	112	44	84	82	114	44	142	68	194	138	2,011	1,365
Smallpox	842	1,659	748	1,760	1,063	1,204	1,232	1,027	909	412	7,807	10,928
Measles	4,610	4,527	4,982	5,911	5,343	5,894	5,542	4,854	4,434	2,435	33,535	33,676
Scarlet fever	2,235	2,525	2,335	2,241	1,708	2,113	1,456	1,629	862	710	16,810	19,765
Whooping cough	1,222	1,327	2,061	1,482	1,204	1,440	1,460	1,466	1,464	1,821	13,275	16,165
Diphtheria	938	1,364	1,058	1,350	778	1,215	793	1,085	656	944	12,876	16,764
Influenza	80,946	424	5,731	293	741	309	159	125	156	63	170,954	3,056
Rabies	1		3	2					3		14	9
Tuberculosis (all forms)	1,164	1,103	1,820	1,366	1,320	1,253	1,295	1,208	1,468	1,283	18,286	13,265
Meningitis epidemic	33	25	28	25	12	11	14	18	13	15	272	193
Poliomyelitis	5	7	9	7	7	3	6	5	12	27	364	303
Pneumonia	4,049	1,222	1,655	1,345	1,066	992	936	738	485	429	18,276	8,976
Septic sore throat	278	148	206	164	114	107	57	77	63	31	1,789	1,558
Syphilis	724	551	1,503	608	1,297	662	1,622	648	1,218	608	13,222	7,277
Gonorrhea	966	1,021	1,350	1,100	1,435	912	1,728	938	1,669	861	17,670	13,826
Chancroid	70	51	64	66	71	55	71	34	148	25	984	789

TABLE 4—SHOWING THE REPORTS OF SEVENTEEN PRINCIPAL COMMUNICABLE DISEASES FOR THE CITY OF CHICAGO, ILLINOIS BY MONTHS FOR THE YEARS JULY 1, 1919 TO JUNE 30, 1920 AND JULY 1, 1920 TO JUNE 30, 1921.

Diseases.	July		August.		September.		October.		November.		December.		January.	
	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21
Typhoid fever	31	14	36	11	33	47	78	41	35	29	21	22	14	18
Malaria				2		1		2						
Smallpox	2	5	19	6	5	7	5	17	5	15	8	29	2	71
Measles	753	447	153	69	101	73	270	148	536	363	757	508	977	738
Scarlet fever	99	179	97	97	304	240	656	503	893	622	1,101	764	1,379	849
Whooping cough	607	392	484	266	506	260	292	199	380	170	696	262	475	310
Diphtheria	350	386	282	230	514	453	948	937	1,112	1,313	779	1,175	601	1,026
Influenza	16	4	26	7	164	44	218	74	178	89	212	90	22,623	94
Rabies					1		1							
Tuberculosis (all forms)	1,431	865	1,065	490	1,201	714	1,274	825	1,199	683	1,084	915	1,101	832
Meningitis epidemic	10	4	7	1	7	5	15	10	13	7	1	4	12	9
Poliomyelitis	27	1	42	19	18	21	3	18	2	9	2	2		
Pneumonia	277	231	167	172	191	237	378	272	483	466	978	696	4,687	1,161
Septic sore throat	1	2	2	1	3	4	14	4	32	13	39	16	32	12
Syphilis	353	312	658	240	719	422	743	256	548	286	524	302	497	403
Gonorrhea	754	770	1,151	453	940	730	964	602	1,042	661	802	69	808	588
Chancroid	36	32	43	23	42	37	52	31	50	38	31	36	108	38

TABLE 4—Concluded.

Diseases.	February.		March.		April.		May.		June.		Totals.	
	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21	1919-20	1920-21
Typhoid fever	4	12	12	15	13	10	14	4	14	11	305	234
Malaria				2				1		3		11
Smallpox	18	67	26	19	7	13	17	13	6	31	120	293
Measles	941	1,100	1,271	1,670	1,439	1,778	1,441	1,652	1,269	1,056	9,908	9,602
Scarlet fever	1,276	665	1,450	621	941	573	756	490	455	312	8,407	5,915
Whooping cough	400	369	471	389	424	389	420	422	395	579	5,550	4,007
Diphtheria	542	817	725	895	539	746	545	664	474	620	7,411	9,252
Influenza	6,606	75	997	58	135	157	58	70	21	12	31,254	774
Rabies											2	
Tuberculosis (all forms)	902	897	1,366	1,094	1,020	946	885	843	1,010	872	13,538	9,976
Meningitis epidemic	10	8	15	12	5	9	4	2	3	6	102	77
Poliomyelitis	3	1	3	1	1	2	1	1	3	5	105	80
Pneumonia	839	934	1,159	991	825	770	739	583	413	324	11,136	6,837
Septic sore throat	10	14	15	10	10	13	13	8	10	4	181	101
Syphilis	366	343	454	385	419	412	460	417	408	301	6,149	4,079
Gonorrhea	842	577	752	675	879	518	794	571	695	533	10,423	6,747
Chancroid	80	22	65	42	18	30	15	20	34	11	574	360

TABLE 5—SHOWING THE PREVALENCE OF SEVENTEEN PRINCIPAL COMMUNICABLE DISEASES AND MORTALITY RECORD OF DEATHS FROM THESE DISEASES IN ILLINOIS BY COUNTIES AND PRINCIPAL MUNICIPALITIES FOR THE FISCAL YEAR, JULY 1, 1920 TO JUNE 30, 1921.

County.	Typhoid fever.		Malaria		Smallpox.		Measles.		Scarlet fever.		Whooping cough.		Diphtheria.		Influenza.		Rabies.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
The State	1,787	370	1,365	76	10,928	29	33,676	353	19,765	361	16,165	549	16,764	1,243	3,056	597	9	2
Adams	18	5	10		52		662	9	56	2	8	3	49	4	9	5		
Quincy	*17*	*2*			*26*		*484*	*6*	*25*		*4*	*1*	*45*	*1*		*2*		
Alexander	8	9	8	2	140		1		11		3	3	24	3	23	8		
Cairo	*2*	*6*		*1*	*40*		*1*					*3*	*7*	*1*		*6*		
Bond	16	3	7	2	33		4		9	1	97	4	42	2		1		
Boone		1			25		24		53	1	16	1	15	2		3		
Brown		1			3		32		19		11		3			1		
Bureau	10	1	70		59		485	3	130	1	189	2	48	7	34	4		
Calhoun		1			2		13		5			1			1	1		
Carroll	4				72		27		22		17		14		16			
Cass	2	1		1	150		64	1	48	2	11		16	1	3	5		
Champaign	7	1	5	1	41		317	1	240	1	193	3	15	2	10	8		
Champaign	*5*				*12*		*147*		*69*	*1*	*29*	*1*	*10*	*1*		*2*		
Urbana	*1*	*1*			*17*		*16*		*80*		*25*		*5*	*1*		*1*		
Christian	10	2			42		77	1	256	1	37	2	59	5	2	7		
Clark	10	1	2	2	37		3		60		19	3	13	2	1	1		
Clay	27	1	18	1	64	2	339	3	9		70		16	3	15	1		
Clinton	4	1	139		30		9	2	30	1	48	10	95	6	54	3		
Coles	48	4	1		32		48		114		155	5	37	2	7	2		
Matoon	*24*	*3*			*13*		*8*		*18*		*82*	*2*	*11*			*1*		
Cook	303	30	33	1	536	2	13,408	146	7,992	188	5,766	164	10,819	762	824	151		2
*Berwyn	*1*				*1*		*133*		*32*		*39*		*19*					
Blue Island					*73*		*23*	*1*	*100*	*6*	*29*	*2*	*31*	*5*				*1*
Chicago	*238*	*26*	*11*	*1*	*294*		*9,678*	*138*	*6,028*	*168*	*4,110*	*130*	*9,570*	*698*	*774*	*124*		*1*
Chicago Heights	*2*	*1*			*2*		*7*		*123*	*4*	*14*	*5*	*62*	*4*		*3*		
Cicero	*3*						*448*	*4*	*114*	*2*	*108*	*4*	*174*	*7*	*4*			
Evanston	*4*	*2*			*26*		*108*		*100*	*2*	*228*	*3*	*213*	*14*	*8*	*1*		
*Forest Park	*1*				*12*		*171*		*32*		*67*		*66*					
*Maywood	*1*		*1*		*8*		*204*		*74*		*41*		*40*					
Oak Park	*1*		*1*		*40*		*1,240*	*1*	*280*	*3*	*379*		*129*	*6*	*5*	*8*		
Crawford	11	2			204	2	2	1	108	3	29	3	28	2		4		

Cumberland	4	1	6		4		3		52	1	11		30	4	19	1		
DeKalb	5	1			31		101		100		129	2	14		9	3		
DeWitt	4	3	2		64		96	1	22	1	76	6	14	4	21	3		
Douglas	57	5			7		30		95	1	49	4	13	1		2		
DuPage	11				14		335		89	3	214	1	76	9	8	1		
Edgar	12	1	4		38		98	2	106		147	7	22	3	122	3		
Edwards	3	1			34		29	1	30	2	25	3	15	2	2	1		
Effingham	12	2	1		21		51	1	16		6	2	14	2	9			
Fayette	6	5	9		197		49	1	13		61	5	19	4	7	4		
Ford	7	2	1		133		133		104	1	3	1	13		1			
Franklin	59	12	118	2	263	1	177	4	37		228	4	38	16	57	7	1	
Fulton	4	1	15	1	184	1	105		296	5	140	2	94	8	103	22		
Canton					*17*		*5*		*102*	*1*	*13*	*1*	*24*	*2*		*10*		
Gallatin	13	3	17	3	75		109	3	2		10	1	12	5	5			
Greene		3			6		54		36		59		6		6	3		
Grundy	4	1	7		7		87		60		158	2	3	1	25	6		
Hamilton	21	5	3	1	80	1	69		24		38	2	63	5		3		
Hancock	32	2	9		188		496	2	61		209	2	12	2	17	9		
Hardin	2	4	13		28		32	5			4		10	4				
Henderson	1		4		12		21		24		46	1				4		
Henry	34	5			68	1	701	2	685	6	419	6	213	16	45	8		
Kewanee	*13*	*1*			*25*	*1*	*365*	*2*	*261*	*2*	*133*	*1*	*119*	*14*		*2*		
Iroquois	19	2			47		64		114	3	198	3	57	4	17	3		
Jackson	21	9	29	9	402	1	11	1	88		20	6	203	12	44	5		
**Murphysboro*	*5*				*107*				*42*				*57*					
Jasper	5	2	2		53		108		9		57	2	11	1	1			
Jefferson	16	12	1	1	120		174	9	18	1	40	9	17	5	17	3		
Jersey	12	3			52		146	2	31		3		4		8	3		
JoDaviess	2				87		12		80	1	18	1	7			2		
Johnson	3		30	1	31		18		9		39	1	21	4	33			
Kane	18	6			32		1,953	11	182	3	439	6	147	8	3	16		
Aurora	*8*	*3*			*12*		*202*	*1*	*28*	*1*	*134*	*4*	*36*	*5*	*1*	*5*		
Elgin	*4*				*13*		*840*	*2*	*32*		*118*	*1*	*73*	*3*		*5*		
Kankakee	13	2	8		17		264	4	84	1	190	5	90	8	112	4		
Kankakee	*9*	*2*			*16*		*84*		*7*	*1*	*43*	*4*	*10*			*1*		
Kendall	10				3		87		17		120	1	10		5	1		
Knox	27	4			130		900	2	86	5	171	3	72	2	84	3		
Galesburg	*18*	*3*			*41*		*630*	*2*	*48*	*4*	*148*	*1*	*30*	*1*	*1*	*2*		
LaSalle	26	4		1	187		259	6	217	5	350	10	51	7	24	5		
LaSalle	*6*	*3*			*1*		*10*		*40*		*29*	*2*	*13*		*5*			
Ottawa					*106*		*5*		*35*	*1*	*36*	*1*	*3*	*1*				
Streator	*9*	*1*			*80*		*99*	*4*	*4*		*18*	*1*	*7*			*2*		
Lake	67	11			49		448	13	158	7	176	8	130	6	1	11		
Waukegan	*24*	*2*			*21*		*13*	*2*	*33*	*1*	*25*	*4*	*58*		*1*	*2*		
Lawrence	24	4	16	3	97		74	3	90	2	39	5	43	3	26	1		
Lee	6				27		21		93	4	89	1	11	1	3	2		
Livingston	6		2		57		73	1	118	2	266	4	47	3	8	3		
Logan	1	1		1	10		155		141	3	74	4	23	1	32	7		
Lincoln	*1*			*1*	*8*		*71*		*39*	*2*	*20*	*1*	*12*			*3*		

TABLE 5—Continued.

Counties.	Typhoid fever.		Malaria.		Smallpox.		Measles.		Scarlet fever.		Whooping cough.		Diphtheria.		Influenza.		Rabies.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
McDonough	20	1	.....	.....	22	.....	144	.....	43	1	59	1	10	1	39	5	.....	.....
McHenry	4	.....	3	.....	39	.....	205	.....	134	.....	181	2	59	5	152	4	.....	.....
McLean	18	5	78	.....	410	2	1,700	6	461	6	421	10	137	9	30	5	.....	.....
Bloomington	*9*	*4*	.....	.....	*158*	.....	*765*	*5*	*165*	*1*	*82*	*4*	*19*	*2*	.....	*2*	.....	.....
Macon	25	6	.....	1	64	1	78	.....	259	2	285	6	252	17	3	8	.....	.....
Decatur	*23*	*6*	.....	.....	*10*	*1*	*50*	.....	*185*	.....	*114*	*3*	*206*	*16*	.....	*6*	.....	.....
Macoupin	15	4	.....	.....	237	.....	997	9	173	2	160	10	158	9	32	12	.....	.....
Madison	13	8	4	3	254	5	393	3	117	15	199	15	267	25	10	15	.....	.....
Alton	*9*	*3*	.....	*1*	*15*	.....	*141*	.....	*46*	*2*	*25*	*2*	*129*	*13*	*2*	*2*	.....	.....
Granite City	.....	*2*	.....	.....	*24*	*2*	*8*	*2*	*10*	*1*	*1*	*2*	*16*	.....	.....	*1*	.....	.....
Marion	38	5	20	1	87	.....	53	2	28	.....	93	7	211	4	46	8	.....	.....
Centralia	*7*	.....	.....	*1*	*28*	.....	*4*	.....	*16*	.....	*12*	*1*	*12*	*3*	.....	*1*	.....	.....
Marshall	22	2	8	.....	8	.....	25	.....	128	3	10	.....	47	3	127	1	.....	.....
Mason	1	2	.....	.....	3	.....	6	.....	158	.....	6	.....	12	.....	12	1	.....	.....
Massac	14	3	12	.....	174	1	8	2	5	.....	13	5	72	6	12	.....	.....	.....
Menard	3	.....	5	.....	12	.....	25	1	97	4	47	.....	6	1	65	1	.....	.....
Mercer	8	1	12	.....	7	.....	424	2	15	.....	109	.....	10	.....	40	1	.....	.....
Monroe	17	3	.....	.....	.....	.....	11	.....	2	1	8	1	27	.....	.....	1	.....	.....
Montgomery	21	4	9	.....	155	.....	566	5	141	1	69	1	117	4	.....	7	.....	.....
Morgan	17	1	15	.....	39	.....	592	4	268	2	133	2	43	1	20	1	.....	.....
Jacksonville	*9*	*1*	.....	.....	*12*	.....	*826*	*2*	*108*	.....	*77*	*1*	*42*	.....	.....	*1*	.....	.....
Moultrie	5	.....	.....	.....	27	.....	57	2	47	.....	74	2	10	.....	8	.....	.....	.....
Ogle	6	.....	.....	.....	150	.....	142	.....	218	4	95	3	10	1	10	5	.....	.....
Peoria	14	7	.....	1	69	1	168	1	1,037	14	73	11	219	27	29	20	.....	.....
Peoria	*9*	*5*	.....	*1*	*46*	.....	*60*	.....	*672*	*5*	*7*	*4*	*168*	*24*	.....	*14*	.....	.....
Perry	22	6	8	.....	50	.....	15	1	33	.....	77	5	79	2	22	5	.....	.....
Piatt	1	.....	1	.....	23	.....	18	.....	42	3	96	2	207	3	.....	2	.....	.....
Pike	8	1	66	.....	12	.....	395	1	31	1	6	.....	13	4	1	1	.....	.....
Pope	2	3	8	.....	14	.....	10	.....	3	.....	.....	.....	1	2	4	1	.....	.....
Pulaski	2	4	70	5	44	.....	20	1	.....	1	21	.....	20	6	24	1	.....	.....
Putnam	.....	.....	7	.....	.....	.....	7	.....	28	1	8	1	2	.....	.....	1	.....	.....
Randolph	16	7	23	1	223	.....	15	.....	31	1	64	8	77	5	.....	.....	.....	.....
Richland	4	6	.....	.....	301	1	128	.....	15	1	.....	.....	47	4	1	.....	.....	.....
Rock Island	21	5	4	1	222	1	361	1	155	1	292	8	152	5	13	4	.....	.....
Moline	*10*	*2*	.....	.....	*72*	.....	*193*	.....	*45*	.....	*78*	*3*	*82*	*2*	*2*	.....	.....	.....
Rock Island	*11*	*3*	.....	*1*	*102*	*1*	*42*	.....	*72*	*1*	*106*	*3*	*50*	*2*	*3*	*3*	.....	.....

St. Clair	45	10	20	5	775	1	117	3	308	4	244	25	257	21	23	12	------	------
Belleville	*4*	------	------	*1*	*33*	------	*3*	------	*46*	------	*8*	*4*	*40*	------	------	*2*	------	------
East St. Louis	*19*	*6*	*4*	*3*	*503*	*1*	*83*	*2*	*171*	*2*	*76*	*21*	*133*	*7*	*15*	*5*	------	------
Saline	11	7	59	3	120	------	479	24	39	------	10	5	112	19	21	12	------	------
Sangamon	47	7	4	1	114	------	500	8	1,338	14	451	4	63	7	24	16	8	------
Springfield	*25*	*5*	------	*1*	*68*	------	*287*	*2*	*1,040*	*11*	*62*	------	*41*	*2*	*1*	*9*	------	------
Schuyler	2	1	------	1	25	------	10	------	48	------	------	1	2	------	10	1	------	------
Scott	3	1	------	------	10	------	84	1	9	------	2	2	------	------	------	2	------	------
Shelby	13	3	4	1	34	------	75	1	56	------	273	7	32	2	2	1	------	------
Stark	------	------	------	------	1	------	172	------	72	------	26	1	3	------	86	4	------	------
Stephenson	3	------	------	------	236	1	243	------	99	1	100	2	59	5	18	3	------	------
Freeport	*2*	------	------	------	*129*	*1*	*180*	------	*35*	*1*	*58*	*1*	*45*	*4*	------	*1*	------	------
Tazewell	3	3	------	1	59	------	31	------	307	3	82	4	43	3	104	5	------	------
Pekin	*3*	*1*	------	*1*	*20*	------	*4*	------	*131*	------	------	------	*33*	*1*	*1*	*4*	------	------
Union	14	6	186	4	70	------	6	2	27	------	47	------	109	9	3	2	------	------
Vermilion	26	13	4	1	138	------	41	------	202	2	314	32	55	5	21	13	------	------
Danville	*11*	*8*	*1*	*1*	*7*	------	*7*	------	*54*	*1*	*27*	*12*	*12*	------	*3*	*6*	------	------
Wabash	8	4	20	------	25	------	18	1	14	------	95	1	77	3	9	1	------	------
Warren	1	------	1	------	21	------	146	2	53	1	25	3	10	1	------	1	------	------
Washington	4	3	------	------	25	------	13	------	68	------	33	2	57	5	5	3	------	------
Wayne	27	4	5	2	287	------	17	------	23	------	15	1	107	11	1	5	------	------
White	66	9	1	1	145	------	59	1	8	------	16	1	76	15	------	5	------	------
Whiteside	6	1	40	------	78	------	158	4	116	1	245	6	12	2	13	6	------	------
Will	39	9	------	------	124	------	787	19	183	3	442	16	192	17	53	22	------	------
Joliet	*21*	*7*	------	------	*20*	------	*373*	*10*	*73*	*2*	*166*	*10*	*98*	*9*	*3*	*9*	------	------
Williamson	47	20	64	9	619	3	41	1	49	------	122	4	126	14	6	14	------	------
**Herrin*	------	------	------	------	*130*	------	*1*	------	*4*	------	------	------	*54*	------	------	------	------	------
Winnebago	23	4	1	1	629	1	631	4	378	6	299	6	98	5	39	6	------	------
Rockford	*14*	*4*	------	*1*	*521*	------	*585*	*3*	*320*	*5*	*189*	*4*	*89*	*4*	*4*	*3*	------	------
Woodford	5	------	------	------	13	------	329	------	85	4	30	2	18	1	25	1	------	------
†State Institutions	6	------	3	------	2	------	111	------	23	------	12	------	72	------	33	------	------	------

TABLE 5—Continued.

County.	Tuberculosis all forms.		Epidemic Meningitis.		Poliomyelitis.		Pneumonia all forms.		Septic Sore Throat.		Syphilis.		Gonorrhea.		Chancroid.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
The State	13,265	5,594	193	63	303	66	8,976	4,948	1,558	190	7,277	419	13,828	41	789	
Adams	76	53			2		13	31		4	19	3	40	1	1	
Quincy	*63*	*34*					*6*	*19*		*4*	*18*	*3*	*35*	*1*	*1*	
Alexander	9	40			1		3	14	59		130	3	20	3	1	
Cairo	*6*	*27*						*11*			*130*	*2*	*78*	*3*		
Bond	11	10			2	1	4	13	32		2	1	15			
Boone	2	8				1	11	9		1				1		
Brown	2	4						9			1		1			
Bureau	78	23		1			55	31	31		7		6			
Calhoun	1	5					1	6		1						
Carroll	4	4	1				22	11	2		3	1	1			
Cass	3	6			4	3	8	17	3			1	5			
Champaign	54	24	1		2	1	25	39	8	3	52	5	131		5	
Champaign	*48*	*8*			*1*	*1*	*3*	*14*		*1*	*30*	*4*	*86*		*5*	
Urbana	*1*	*8*			*1*			*3*	*2*	*2*	*8*	*1*	*22*			
Christian	11	21			4	1	15	35	11	2	15	2	54		1	
Clark	6	16					1	17	4	1			6			
Clay	32	18			3	2	9	10	21		7	1	17		1	
Clinton	9	17	1		2		1	11	8		3	1	13		3	
Coles	41	38	2		1		24	28	21	7	38	4	114		1	
Mattoon	*35*	*13*	*1*				*8*	*15*		*4*	*21*	*4*	*88*		*1*	
Cook	10,287	2,940	97	30	159	11	7,129	2,545	172	34	4,253	218	7,385	12	368	
**Berwyn*					*3*		*1*				*1*		*2*			
Blue Island	*12*	*2*					*10*	*13*	*1*	*1*				*1*		
Chicago	*10,047*	*2,347*	*83*	*28*	*127*	*8*	*6,837*	*2,254*	*103*	*20*	*4,204*	*198*	*7,283*	*9*	*363*	
Chicago Heights	*5*	*12*			*2*		*13*	*24*		*2*	*39*		*49*		*3*	
Cicero	*30*	*23*	*1*	*1*	*5*	*1*	*23*	*26*	*2*	*1*	*1*	*1*	*6*			
Evanston	*21*	*23*	*1*	*1*	*2*	*2*	*17*	*20*						*1*		
**Forest Park*	*6*						*33*		*3*		*2*		*2*			
**Maywood*	*25*						*19*						*1*			
Oak Park	*58*	*16*	*2*		*2*		*95*	*30*		*2*	*2*	*2*	*1*	*1*		
Crawford	10	11	3	2	1			23	6		6		6			
Cumberland	2	12		1			4	14			1		10			
DeKalb		19					2	17	4	1	7	1	8			
DeWitt	11	9	2	1	2		6	17	4	1		1	16	1	4	
Douglas	25	11	1		3		20	7		1	3					

DuPage	28	19			2	1	19	22	5	3	7		16			
Edgar	20	20		1	1	1	20	9	9		8		12		1	
Edwards	20	8						3					4			
Effingham	2	18					7	13	40	1	4	6	6			
Fayette	19	24					3	18	4		3		5			
Ford	4	7		1			1	9	2	1		1				
Franklin	61	40			1	1	56	48	57	1	40	7	73		5	
Fulton	45	28	1	1			29	33	132	4	20	3	55		15	
Canton	7	7						6		2	3		9		1	
Gallatin	12	10					9	4								
Greene	38	14			1	1	7	11	1		11		23			
Grundy	65	9	1		1	1	11	12	6		1	1	1			
Hamilton	3	22	2				14	19	8	2			8			
Hancock	9	14	1		1		9	11	8	1	8		19		1	
Hardin	2	11					4	4	32							
Henderson	4	2						7								
Henry	27	32	1	1	2	1	24	33	11	5	16		44	1		
Kewanee	7	7		1			1	11		2	8		12			
Iroquois	9	14	6	1	2		8	18	12		3	2	14	1	2	
Jackson	38	35	6	1	5		16	24	19	2	34	7	27			
**Murphysboro*	12				1		2				32		21			
Jasper	47	7	1		3		11	3	2		1		2			
Jefferson	2	45		1	1	2	23	28	3	2	1		4		2	
Jersey	5	8	1				4	5	2		5	1	26		3	
JoDaviess	4	12			1		4	19			3		4			
Johnson	17	9					7	5	38	1	4		2			
Kane	53	97	2	1	6		86	79	1	4	117	4	357		10	
Aurora	22	28	1	1	2		49	24		2	37	2	247		4	
Elgin	24	45			3		16	31		1	28	2	53		4	
Kankakee	70	79			3		30	32	26	3	3	1	3		1	
Kankakee	5	15			1		2	14		2	1					
Kendall	7	3			1		5	6	3		5		6			
Knox	17	28	2		6		48	29	3	2	35	7	51		1	
Galesburg	14	17	1		2		32	18		2	33	3	48		1	
LaSalle	69	72	3	2	8	2	85	79	5	5	45	2	132		2	
LaSalle	28	7	1		2		36	15		2	23	1	44			
Ottawa	3	10					4	11			2		14			
Streator	4	6		1	1		8	24			6		64			
Lake	13	37	4	3	11	4	34	53	5	2	15	4	75		3	
Waukegan	5	9	1		3	1	10	10		2	13	2	56			
Lawrence	15	15		1	1		8	14	11	1	11	1	16		1	
Lee	17	17					10	13	2				4			
Livingston	11	12			3	1	25	22	1	1	25	1	36		2	
Logan	5	36	1		1		4	30	1	2	76	2	9		2	
Lincoln	2	31	1					15		2	75	1	6		1	
McDonough	9	19	1				21	11	10	1	6	4	4		1	
McHenry	10	26			3	1	13	25	5	1	8	1	15			
McLean	89	48	2	1	5	1	27	45	19	3	25	2	205		2	
Bloomington	81	25	1	1	2			24		3	21	1	188		1	

TABLE 5—Concluded.

County.	Tuberculosis all forms.		Epidemic Meningitis.		Poliomyelitis.		Pneumonia all forms.		Septic Sore Throat.		Syphilis.		Gonorrhea.		Chancroid.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Macon	55	46	1		1			45		1	214	10	314	1	3	
Decatur	*49*	*37*	*1*		*1*			*37*		*1*	*214*	*9*	*309*	*1*	*2*	
Macoupin	7	16	6	1	1	1	15	41	13	1	14	2	95			
Madison	65	84			10	3	48	70	2	6	167	9	499		59	
Alton	*37*	*19*			*1*		*17*	*15*		*1*	*129*	*1*	*298*		*49*	
Granite City		*15*			*1*	*1*	*1*	*4*		*2*	*11*	*3*	*40*			
Marion	74	28					17	23	11	1	6	1	15	1		
Centralia	*27*	*6*						*6*			*2*	*1*	*6*			
Marshall	1	9	1	1			9	9					3			
Mason	33	14	3				3	8	7		14		36		1	
Massac	34	18					44	9	5	2		2				
Menard	5	10			1		10	5	9		2	1	17			
Mercer	1	5			2		4	11	13		2		6			
Monroe	10	3					1	4	3				1			
Montgomery	68	26		1	1		10	27	29	3	55	4	47	1	41	
Morgan	98	42	1		1		30	56	54		95	10	42	1	2	
Jacksonville	*89*	*35*	*1*		*1*		*2*	*31*			*77*	*9*	*32*	*1*		
Moultrie	1	7	2					10			8		19			
Ogle	25	7					47	19	2		1		4			
Peoria	114	113		1	2	3	9	96	2	6	224	16	370	2	25	
Peoria	*80*	*48*		*1*		*3*	*4*	*70*		*6*	*223*	*13*	*369*	*2*	*24*	
Perry	4	12	2				6	9	62	1	3	3	12		2	
Piatt	15	11			1		7	6	1		3		5		1	
Pike	11	9			1		15	17	25	1	5		15		1	
Pope	4	9					2	3	1	1	3	1	4			
Pulaski	4	22				2	8	13			3		4		4	
Putnam	9	4	3					5			3		4			
Randolph	133	23				2	13	16	12	1	5	1	8		1	
Richland	11	15	2				4	5	1	1	3	1	3	1		
Rock Island	186	78	4		3	1	137	60		8	287	7	957	1	27	
Moline	*59*	*25*	*3*				*38*	*15*		*2*	*96*	*2*	*467*	*1*	*15*	
Rock Island	*61*	*30*	*1*		*2*	*1*	*74*	*21*		*6*	*189*	*1*	*368*		*11*	
St. Clair	89	109	3	2	8	3	43	113	10	5	302	15	470	2	112	
Belleville	*5*	*22*					*3*	*22*			*12*	*1*	*72*		*4*	
East St. Louis	*73*	*64*	*3*	*2*	*8*	*3*	*21*	*67*	*1*	*5*	*289*	*10*	*396*	*2*	*107*	
Saline	33	41				1	22	39	28	4	29	1	154	1	19	

Sangamon	34	139	1		8	4	80	88	77		257	10	280	4	17	
Springfield	*24*	*52*			*4*	*3*	*44*	*60*			*245*	*10*	*251*	*4*	*16*	
Schuyler	5	13					2	14	1					1		
Scott	1	7						5			2					
Shelby	29	19	2				3	19	15	1	9		9		2	
Stark	1	3					5	4		1	3					
Stephenson	27	20	2			2	13	24	5	5	29	2	82		1	
Freeport	*1*	*15*				*2*	*9*	*19*		*5*	*29*	*2*	*80*		*1*	
Tazewell	20	17					2	16	4	2	36		59		11	
Pekin	*15*	*6*						*5*			*30*		*47*		*8*	
Union	18	59			2	1	3	19	32	1	2	7	11		1	
Vermilion	110	75	1	2	1		41	65	11	14	133	2	210	1	14	
Danville	*70*	*31*	*1*				*15*	*27*		*3*	*125*	*2*	*184*	*1*	7	
Wabash	10	9					3	4	18	1						
Warren	1	12	5	2			10	13	8	3	27		27			
Washington		9			2		1	12		1		1	2			
Wayne	9	22	1			1	6	19		1			5			
White	14	18					15	19	16		4		5			
Whiteside	36	14			2	1	33	28	72	2	9		3		1	
Will	14	92	3	1	1	1	84	75	56	4	56	1	279	2	16	
Joliet	*7*	*30*	*1*				*41*	*31*		*2*	*54*	*1*	*272*		*15*	
Williamson	18	52	1		2	2	14	35	12	3	12	1	19	1	1	
**Herrin*	*1*				*1*		*1*				*3*		*4*			
Winnebago	54	61	1	3	1	1	40	66	10	4	101	12	406	1	22	
Rockford	*46*	*51*	*1*	*3*	*1*	*1*	*36*	*52*		*3*	*101*	*10*	*397*		*22*	
Woodford	3	6	3				4	7	1	1	4		2			
†State institutions	240		2				85		62		120		140		5	

* Not designated by the U. S. Bureau of the Census until 1921 to be shown separately; hence, mortality figures for the last six months of 1920 are not available.
† All deaths which occurred in State Institutions are included in the total deaths for the County in which the Institution is located.

TABLE 6—COST OF COMMUNICABLE DISEASES

County.	Estimated population Jan. 1, 1921.	Typhoid fever.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria.	Influenza.
The State	6,572,492	$1,906,600	$2,128,520	$1,124,479	$548,692	$710,651	$638,360	$1,120,205	$1,913,094
Adams	*62,188	$ 25,512	$ 1,605	$ 4,942	$ 11,581	$ 2,506	$ 3,451	$ 3,443	$ 27,993
Alexander	24,108	45,912	70,205	13,302	21	281	3,451	2,418	25,033
Bond	*16,045	15,312	70,205	3,137	51	1,306	4,601	2,168	3,113
Boone	*15,322	5,112	----------	2,377	251	1,581	1,151	1,618	9,333
Brown	*9,336	5,112	----------	287	331	481	111	93	3,113
Bureau	*42,648	5,112	11,205	5,607	6,511	3,806	2,991	5,618	12,743
Calhoun	*8,245	5,112	----------	192	141	156	1,151	----------	3,113
Carroll	19,479	812	----------	6,842	281	556	171	368	163
Cass	17,950	5,112	3,265	15,107	1,201	2,606	111	968	15,553
Champaign	57,487	5,112	3,905	3,897	3,731	6,556	3,581	1,618	24,903
Christian	38,856	10,212	----------	3,992	1,331	6,956	2,301	4,243	21,773
Clark	*21,165	5,112	6,525	3,517	41	1,506	3,451	1,618	3,113
Clay	*17,684	8,512	35,105	12,282	5,051	231	701	2,418	3,253
Clinton	22,959	5,112	22,245	2,852	1,201	1,306	11,501	5,693	9,843
Coles	35,168	22,012	165	3,042	491	2,856	5,751	2,043	6,273
Cook	3,119,741	141,200	8,385	50,922	214,391	303,206	188,601	689,593	476,343
Crawford	*22,771	10,212	----------	25,772	1,061	4,356	3,451	1,818	12,443
Cumberland	*12,858	5,112	965	382	41	1,856	111	3,218	3,303
DeKalb	*31,339	5,112	----------	2,947	1,021	2,506	2,391	368	9,393
DeWitt	19,288	15,312	325	6,082	1,521	1,106	6,901	3,218	9,513
Douglas	19,738	26,912	----------	667	311	2,931	4,601	893	6,223
DuPage	43,014	2,212	----------	1,332	3,361	3,881	2,691	7,218	3,183
Edgar	*25,769	5,512	645	3,612	2,111	2,656	8,051	2,418	10,523
Edwards	*9,431	5,112	----------	3,232	851	2,606	3,451	1,618	3,123
Effingham	*19,556	10,212	165	1,997	1,071	406	2,301	1,618	93
Fayette	*26,187	25,512	1,625	18,717	1,051	331	5,751	3,218	12,473
Ford	*16,466	10,212	165	12,637	1,341	3,156	1,151	341	13
Franklin	60,523	61,212	70,205	59,187	2,331	931	4,601	12,818	22,273
Fulton	*48,163	5,112	5,505	21,297	1,061	10,156	2,501	6,418	69,233
Gallatin	*12,856	15,312	105,305	7,127	1,101	3,906	101	868	15,553
Greene	22,937	15,312	----------	572	551	906	591	168	9,363
Grundy	*18,580	5,112	1,125	667	881	1,506	2,681	618	18,853
Hamilton	*15,920	25,512	35,105	10,702	701	606	2,301	4,343	9,333
Hancock	*28,523	12,612	1,445	17,862	6,071	1,531	3,191	1,618	28,073
Hardin	7,587	20,412	2,085	2,662	5,261	----------	41	3,218	----------
Henderson	9,774	212	645	1,142	221	606	1,011	----------	12,443
Henry	45,514	25,512	----------	9,562	8,121	20,431	7,491	14,143	25,253
Iroquois	*34,841	10,012	----------	4,467	651	4,506	3,631	3,643	9,473
Jackson	37,291	45,912	315,905	41,292	671	2,206	6,901	11,693	15,943
Jasper	*16,064	10,212	325	5,037	1,091	231	2,301	843	13
Jefferson	*28,480	61,212	35,105	11,402	9,461	1,306	10,351	4,018	9,473
Jersey	*12,682	15,312	165	11,402	2,301	456	401	443	9,473
JoDaviess	*21,917	412	----------	8,267	131	2,556	1,151	193	6,223
Johnson	*12,022	612	35,105	2,947	191	231	1,151	3,218	333
Kane	100,285	25,512	----------	3,042	25,591	6,206	7,691	8,093	49,763
Kankakee	45,372	10,812	1,285	1,617	4,851	2,656	5,751	6,668	13,513
Kendall	*10,074	2,012	----------	287	881	431	1,751	268	3,153
Knox	46,785	20,412	----------	12,352	10,111	6,506	3,361	2,918	10,143
LaSalle	93,213	20,412	3,265	17,767	6,311	8,181	11,501	5,618	15,743
Lake	76,265	56,112	----------	4,657	13,661	9,106	9,201	6,568	34,213
Lawrence	*21,380	20,412	12,345	9,217	3,161	3,356	5,751	2,743	3,363
Lee	28,030	1,202	----------	2,567	221	5,206	1,441	843	6,233
Livingston	*39,070	1,212	325	5,417	1,291	4,061	4,861	2,843	9,383
Logan	*29,562	5,112	3,265	952	1,561	5,181	4,601	1,143	22,023
McDonough	27,094	7,112	----------	2,092	1,451	1,631	1,141	818	15,893
McHenry	33,232	812	485	3,707	2,061	3,356	2,911	4,243	13,923
McLean	70,323	25,512	12,485	45,152	20,311	14,831	11,501	8,393	15,893
Macon	66,307	30,612	3,265	6,082	791	7,581	6,901	15,668	24,883
Macoupin	57,952	20,412	----------	22,517	14,931	5,431	11,501	8,918	37,523
Madison	108,651	40,812	105,305	39,632	5,591	19,506	17,251	20,443	46,653
Marion	37,745	25,512	35,105	8,267	1,641	706	8,051	7,493	25,263
Marshall	*14,760	10,612	1,285	762	261	4,856	101	2,843	4,373
Mason	*16,634	10,212	----------	287	71	3,956	61	318	3,223
Massac	*13,559	15,312	1,920	19,632	2,111	131	5,751	5,118	123
Menard	*11,694	612	805	1,142	811	4,631	471	818	3,753
Mercer	*18,800	5,112	1,925	667	5,351	381	1,091	268	3,503

FOR THE FISCAL YEAR JULY 1, 1920 TO JUNE 30, 1921.

Rabies.	Tuberculosis, all forms.	Meningitis epidemic.	Poliomyelitides.	Pneumonia.	Septic sore throat.	Syphilis.	Gonococcus infection.	County total.	Per capita.
$6,750	$72,207,900	$105,125	$58,800	$18,140,755	$323,077	$2,043,140	$475,495	$103,933,543	$15 81
.....	$ 699,100	.....	$ 100	$ 112,955	$ 6,346	$ 11,420	$ 4,160	$ 915,114	14 71
.....	528,800	.....	50	51,075	596	22,420	11,335	774,899	32 14
.....	135,800	.....	800	47,435	326	3,420	3,785	291,459	18 17
.....	109,600	.....	800	32,875	1,591	.....	3,160	169,449	11 05
.....	57,200	.....	.....	32,875	.....	220	60	99,883	10 70
.....	306,100	$ 650	.....	112,955	316	820	235	474,669	11 13
.....	120,300	.....	.....	21,955	1,591	.....	.....	153,711	18 64
.....	57,200	25	.....	40,155	26	3,520	60	110,179	5 66
.....	83,400	.....	2,400	61,995	36	3,320	160	195,234	10 88
.....	319,200	25	800	142,075	4,801	20,820	3,310	544,334	9 47
.....	279,900	.....	750	127,515	3,266	6,520	1,385	470,144	12 36
.....	214,400	.....	.....	61,995	1,621	.....	185	301,578	14 26
.....	238,800	.....	1,600	36,515	216	3,920	460	349,064	19 74
.....	227,500	25	100	43,795	86	3,520	360	335,139	14 60
.....	502,600	50	50	102,035	11,241	16,320	2,885	677,814	19 27
6,300	37,208,800	50,250	14,000	9,263,915	55,276	1,100,220	221,860	49,993,262	16 02
.....	148,800	3,560	50	83,835	66	.....	185	295,709	13 43
.....	162,000	1,840	.....	51,075	.....	220	285	230,408	17 92
.....	253,700	.....	.....	61,995	1,621	3,920	235	345,209	11 02
.....	122,700	650	100	61,995	1,621	3,320	3,535	237,899	12 33
.....	148,900	25	150	25,595	1,591	420	.....	219,219	11 11
.....	253,700	.....	800	80,195	4,756	820	435	364,584	8 48
.....	256,800	1,675	800	33,145	96	920	335	329,299	12 78
.....	109,600	.....	.....	11,035	.....	.....	435	141,063	14 96
.....	240,600	.....	.....	47,435	1,981	19,320	185	327,384	16 74
.....	319,200	.....	.....	65,635	46	420	160	454,139	17 34
.....	96,500	1,675	.....	32,875	1,601	3,320	.....	164,989	10 02
50	528,800	.....	800	174,835	2,151	25,820	1,860	967,874	15 99
.....	371,600	1,675	.....	120,235	7,626	11,420	1,410	635,249	13 19
.....	109,600	3,350	.....	1,330	6,346	.....	.....	269,849	20 99
.....	188,200	.....	800	40,155	16	1,220	610	258,464	11 27
.....	122,700	25	800	43,795	66	3,320	60	202,209	10 88
.....	293,000	50	.....	69,275	3,236	.....	235	454,399	28 54
.....	188,200	25	50	40,155	1,661	920	510	303,924	10 66
.....	148,900	.....	.....	14,675	326	.....	.....	197,580	26 04
.....	31,000	.....	.....	25,595	.....	.....	.....	72,875	7 46
.....	424,000	25	800	120,235	7,991	1,720	4,135	669,519	14 71
.....	188,200	1,725	100	66,175	126	9,720	3,485	305,914	8 78
.....	463,300	1,725	250	87,475	3,346	25,020	710	1,032,349	27 68
.....	120,500	25	150	11,035	26	220	85	152,094	9 47
.....	594,300	1,675	1,600	102,035	3,236	220	85	845,479	29 60
.....	109,600	.....	50	18,315	36	3,320	135	171,409	13 52
.....	162,000	.....	50	69,275	.....	420	135	250,813	11 44
.....	122,700	.....	.....	18,315	1,961	520	85	187,369	15 59
.....	1,275,500	1,675	300	287,675	6,346	24,220	8,960	1,730,574	17 26
.....	1,019,700	.....	150	116,595	4,991	3,520	110	1,192,229	26 28
.....	44,100	.....	50	21,955	36	620	185	75,729	7 52
.....	371,600	50	300	105,675	3,186	25,320	1,310	573,244	12 25
.....	948,000	3,350	1,500	287,675	7,931	10,820	3,335	1,351,409	14 50
.....	489,500	5,025	3,200	193,035	3,206	14,020	1,910	843,414	11 06
.....	201,300	.....	50	51,075	1,691	4,320	435	319,219	14 93
.....	227,500	.....	.....	47,435	26	.....	135	292,819	10 45
.....	162,000	.....	800	80,195	1,591	5,720	935	280,634	7 18
.....	476,400	25	50	109,315	3,176	13,920	260	646,984	21 89
.....	253,700	25	.....	40,155	1,681	13,120	135	338,954	12 51
.....	245,400	.....	800	91,115	1,631	4,020	410	374,874	11 28
.....	633,600	50	800	163,912	4,912	8,820	5,160	971,344	13 81
.....	607,400	25	50	163,915	1,591	52,520	10,985	932,269	14 06
.....	214,400	1,725	800	149,355	1,711	7,720	2,410	499,354	8 62
.....	1,105,200	.....	2,400	254,915	9,516	44,720	12,385	1,724,329	15 87
.....	371,600	.....	.....	83,835	1,691	3,820	3,510	576,494	15 27
.....	122,700	1,675	.....	32,875	.....	.....	110	182,453	12 36
.....	188,200	75	.....	29,235	76	1,520	935	238,169	14 32
.....	240,600	.....	.....	33,955	3,206	6,520	.....	334,379	24 66
.....	135,800	.....	50	18,315	96	3,420	460	171,184	14 64
.....	70,300	.....	100	40,155	136	320	60	129,369	6 88

TABLE 6

County.	Estimated population Jan. 1, 1921.	Typhoid fever.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria.	Influenza.
Monroe	$*12,839	$ 15,312			$ 121	$ 1,306	$ 1,151	$ 693	$ 3,113
Montgomery	42,031	20,412	$ 1,445	$14,727	8,421	4,081	1,241	5,143	21,773
Morgan	*33,567	6,512	2,405	3,707	8,131	7,806	2,431	1,643	3,303
Moultrie	14,861	1,012		2,567	1,681	1,181	2,301	268	83
Ogle	*26,830	1,212		14,252	1,431	7,656	3,451	818	15,603
Peoria	112,890	35,712	3,265	9,657	2,241	33,631	12,651	21,618	62,293
Perry	22,985	30,612	1,285	4,752	1,061	831	5,751	3,093	15,723
Piatt	*15,714	212	165	2,187	191	3,906	2,301	6,843	6,223
Pike	*22,866	5,112	10,565	1,142	4,511	1,331	61	3,218	3,113
Pope	*9,625	15,312	1,285	1,332	111	81		1,618	3,143
Pulaski	*14,629	20,412	175,505	4,182	1,061	1,206	211	4,818	3,343
Putnam	7,581		1,125		81	1,256	1,151	68	3,113
Randolph	*29,109	35,712	35,105	21,187	161	1,331	9,201	4,693	
Richland	*14,044	30,612		31,697	1,291	931		3,393	13
Rock Island	94,553	25,512	3,745	24,192	3,171	4,431	9,201	6,568	12,533
St. Clair	138,232	51,012	175,505	76,727	3,161	9,906	27,601	17,993	37,443
Saline	39,193	35,712	105,305	14,402	25,211	981	5,751	15,218	37,413
Sangamon	101,214	35,712	3,745	10,832	9,411	41,156	4,601	5,618	49,843
Schuyler	*13,285	5,112	3,265	2,377	111	1,206	1,151	68	3,203
Scott	*9,489	5,112		952	1,391	231	2,301		6,223
Shelby	*29,601	15,312	3,745	3,252	1,311	1,406	8,051	1,918	3,123
Stark	*9,693			97	1,731	1,806	1,151	93	13,263
Stephenson	37,837	612		25,522	2,441	3,031	2,301	4,243	9,483
Tazewell	39,004	15,312	3,265	5,607	321	9,331	821	2,818	16,543
Union	*20,249	30,612	140,405	6,652	2,111	681	471	7,693	6,233
Vermilion	87,004	66,312	3,745	13,112	421	6,156	36,801	4,168	40,513
Wabash	*14,034	20,412	3,205	2,381	1,061	356	1,501	3,593	3,193
Warren	*21,488	212	165	1,997	2,571	1,881	3,451	818	3,113
Washington	*18,035	15,312		2,381	141	1,706	2,301	4,193	9,453
Wayne	*22,772	20,412	70,205	27,267	181	581	1,151	8,743	15,553
White	*20,081	45,912	35,105	13,777	1,151	206	1,151	12,018	15,553
Whiteside	36,346	5,112	6,405	7,412	3,791	3,456	6,901	1,618	18,733
Will	93,791	45,912		11,782	19,961	6,231	18,401	14,168	68,733
Williamson	62,740	102,012	315,905	68,107	971	1,231	4,601	11,218	43,543
Winnebago	93,791	20,412	3,265	62,857	8,521	12,756	6,901	5,218	18,993
Woodford	*19,340	1,012		1,237	3,301	4,331	2,301	1,018	3,353

* Population as of Jan. 1, 1920: Decrease between 1910 and 1920; no estimate as of July 1, 1920 made.

Concluded.

Rabies.	Tuberculosis, all forms.	Meningitis epidemic.	Poliomyelitides.	Pneumonia.	Septic sore throat.	Syphilis.	Gonococcus infection.	County total.	Per capita.
.....	$ 44,100	.....	.....	$ 14,675	$ 36	.....	$ 60	$ 76,761	$ 5 98
.....	245,400	$1,675	$ 50	98,395	6,021	$18,020	4,310	451,114	10 73
.....	555,000	25	50	203,955	546	40,620	4,185	840,319	25 03
.....	70,300	50	.....	36,515	.....	920	510	117,388	7 90
.....	96,500	.....	.....	69,275	26	220	135	210,579	7 85
.....	1,485,100	1,675	2,400	349,555	9,516	72,120	15,485	2,116,919	18 74
.....	162,000	50	.....	32,875	2,201	9,720	335	271,289	11 80
.....	148,900	.....	50	21,955	16	420	160	193,529	12 32
.....	122,700	.....	50	61,995	1,831	620	410	216,659	9 48
.....	122,700	.....	.....	11,035	1,591	3,520	135	161,863	16 82
.....	293,000	.....	1,600	47,435	.....	420	135	553,328	37 82
.....	57,200	75	.....	18,315	.....	420	135	82,939	10 94
.....	306,100	.....	1,600	58,355	1,701	3,720	235	479,101	16 46
.....	201,300	50	.....	18,315	1,591	3,520	3,210	295,923	21 07
.....	1,052,800	100	800	218,515	12,686	50,520	27,060	1,451,734	15 35
.....	1,432,700	3,350	2,400	411,435	7,981	76,820	17,985	2,352,009	17 01
.....	541,900	.....	800	142,075	6,586	6,120	6,985	941,459	24 02
$406	1,825,700	25	3,200	325,120	776	56,820	19,585	2,392,544	23 64
.....	173,800	.....	.....	51,075	16	.....	3,160	244,544	18 41
.....	95,800	.....	.....	18,315	.....	320	.....	130,645	13 77
.....	253,700	50	.....	69,275	1,731	1,020	260	364,134	12 30
.....	44,100	.....	.....	14,675	1,591	420	.....	78,927	8 14
.....	266,800	50	.....	87,475	7,931	9,220	2,085	421,194	11 13
.....	227,500	.....	.....	58,355	3,176	3,120	1,210	347,379	8 91
.....	777,700	.....	800	69,275	1,901	22,520	310	1,067,364	52 71
.....	987,300	3,350	50	236,715	22,196	19,320	5,535	1,445,694	16 62
.....	122,700	.....	.....	14,675	1,761	.....	.....	174,838	12 46
.....	162,000	3,350	.....	47,435	4,811	2,820	710	235,334	10 95
.....	122,700	.....	100	43,795	1,591	3,320	85	207,078	11 48
.....	293,000	25	800	69,345	1,591	.....	160	509,014	22 35
.....	240,600	.....	.....	69,345	166	520	160	435,664	21 70
.....	188,200	.....	800	102,035	3,876	1,020	110	349,469	9 62
.....	1,210,000	1,650	850	273,115	6,866	8,820	13,210	1,699,649	18 12
.....	686,000	25	1,600	127,515	4,851	4,420	3,610	1,375,609	21 93
.....	817,000	5,025	800	240,355	6,406	47,420	13,285	1,269,214	13 53
.....	83,400	75	.....	25,505	1,591	520	85	127,819	6 61

DIVISION OF TUBERCULOSIS.

GEORGE THOMAS PALMER, M. D., *Acting Chief.**

Throughout the fiscal year that ended June 30, 1921, the Division of Tuberculosis continued to function along the cooperative lines established in the past and described at length in the third annual report. During the last four months of the year, however, the activities of the division were somewhat curtailed due to the resignation of the Assistant Director of the Department of Public Health, who also acted as chief of the Division of Tuberculosis. The position was still vacant at the close of the fiscal year.

Due to the very limited appropriation by the State for tuberculosis work and the continuation of the established policy of close cooperation

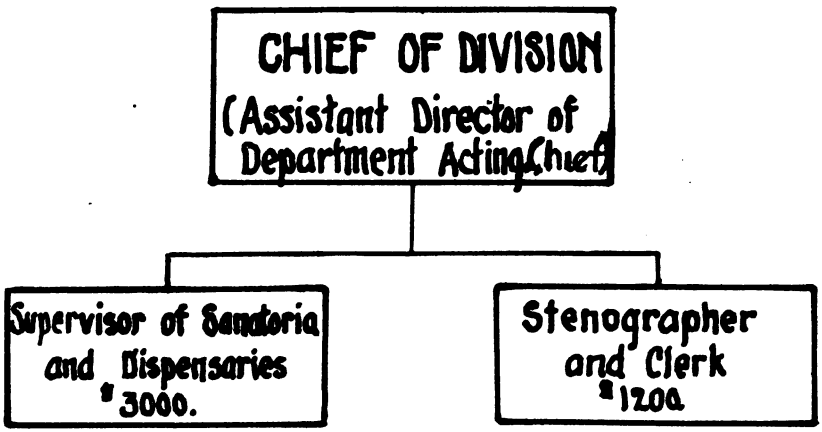

Figure XII—Divisional Organization for Biennium, 1921-23.

with the Illinois Tuberculosis Association and other governmental and extra-governmental agencies, the greater part of the anti-tuberculosis work accomplished during the year was carried out through the activities of the Illinois Tuberculosis Association and county and municipal organizations.

While the field service has been largely in the hands of other agencies, still the division has been responsible for carrying out those functions that only the State Department of Public Health is prepared and authorized to do and which have been highly important contributing factors in the success that has attended the anti-tuberculosis program in Illinois during recent years. These functions include the following:

* Resigned March 1, 1921.

1. The examination of plans for county tuberculosis sanatoria construction. Such plans must, according to law, be approved by the State Department of Public Health prior to their utilization.
2. The inspection of sites chosen by counties for the erection of sanatoria. This work has been done through the assistance of the sanitary engineers of the department.
3. The inspection of existing municipal and county tuberculosis sanatoria with especial reference to their sanitary conditions and their fitness for the purpose for which they were built.
4. The preparation and enforcement of uniform rules and regulations for the control of pulmonary tuberculosis.
5. Joint supervision over the placement and activities of community and county public health nurses.

In addition to these things, which have consumed a great amount of time, the division has prepared a popular pamphlet on the cause, prevention and care of tuberculosis. This bulletin has been widely circulated throughout the State both directly to the public and through the medium of the various organizations engaged in tuberculosis work. It has been so popular that several reprints and revisions have been necessary, the last one having been made for 25,000 copies during the fiscal year.

In performing its functions as outlined above the division has been identified with maintaining a clinical service throughout the State that has been made possible through the support and cooperation of the medical profession. This service is also participated in by county and municipal school nurses. Besides these, an average of thirty county medical society diagnostic clinics have been held during each month.

Close contact has been maintained at all times with the sixty-four tuberculosis nursing services established in various parts of the State so that reports of numerous surveys as well as other valuable data have found their way to the division. This has been due almost wholly to the cooperation of the supervising nurse of the Illinois Tuberculosis Association, since the department has not been able to fill satisfactorily the position of State supervising nurse.

During the year the division cooperated and assisted extensively in the selection of sanatoria personnel, the formation of rules for operating sanatoria and the creation of diagnostic dispensaries and nursing service. It has also given material assistance to cooperating agencies in planning and carrying out a program of the modern health crusade in which 500,000 school children were enrolled and who have been active in many public health functions, especially tuberculosis.

The widespread favorable public opinion relative to active antituberculosis service on a large scale has been expressed during the year through the enormous sums of money appropriated by various counties for this work. The total appropriation by counties for sanatoria work in 1920 and 1921 amounted to $2,664,250, or a yearly sum equal to more than twice the annual appropriation to the State Department of Public Health for the next biennium.

At the November election four new counties voted to establish tuberculosis sanatoria and the county boards of supervisors were

authorized to make the necessary appropriations. These counties were Knox, Montgomery, Rock Island and Shelby. Four other counties voted in favor of levying a definite excess tax for sanatorium maintainance purposes. These, together with the sums for which the taxes were levied, are: Christian, $30,000 annually for five years; Macon, $75,000 annually for five years; Madison, $75,000; Will, $100,000 for the first year, and $50,000 annually thereafter for three years. Other counties that made appropriations during the year, together with the sums in each case, are: Adams, $40,000; Boone, $3,000; Champaign, $90,000; Clay, $16,000; Crawford, $3,500; DeWitt, $90,000; Douglas, $15,000; Fulton, $5,000; Grundy, $10,000; Jackson, $5,000; Kane, $51,000; Livingston, $96,000; McDonough, $45,000; McLean, $71,850; Piatt, $38,000; Pike, $12,000; Ogle, $30,000; Tazewell, $35,000; Vermilion, $37,000; Whiteside, $6,000; Winnebago, $25,000; and Woodford, $6,000.

The total appropriation by all counties to be expended during 1921 for tuberculosis sanatorium purposes was $946,350. This sum, however, does not include all money available for use specified since a number of counties found surplus funds on hand that had been appropriated but not expended in previous years. Neither do the sums referred to in this report include money spent by the various extra-governmental agencies. Altogether, therefore, the figures representing the grand total of money spent in Illinois during the year for tuberculosis work runs well into the millions.

At the end of the fiscal year county tuberculosis sanatoria were in operation in Adams, DeKalb, Kane, LaSalle and McLean Counties, while sanatoria were practically completed in Champaign, McDonough, Tazewell, Morgan and Woodford Counties. Sanatoria were also in definite process of construction in Champaign, Livingston and Macon Counties. Municipal sanatoria were in operation in Chicago, Peoria, Rockford and Rock Island. In Rockford a working plan has been adopted to change the Rockford municipal sanatorium to a Winnebago County sanatorium. In Rock Island County the proposition carried to abandon the Rock Island municipal sanatorium and create a Rock Island County sanatorium. In Morgan County the municipal sanatorium voted by the people, but never erected, had been abandoned for the establishment of the Morgan County sanatorium.

In continuation of a program for the standardization of Illinois sanatoria, inspections of public sanatoria and their rating according to the plan approved by the American Sanatorium Association were completed. This work was accomplished through the joint efforts of the State Department of Public Health and the Illinois Tuberculosis Association, and the results of the study are now available for the benefit of interested people.

The results of the tuberculosis campaign in Illinois, embracing the activities of all organizations whether National, State, county or munici-

pal, have been to reduce in a large measure the number of deaths from tuberculosis. Since the fiscal year 1917-1918, the actual number of deaths from all forms of tuberculosis in Illinois, has been reduced from 8,402 to 5,594, or a decrease of 2,808, according to the statistical records of the State Department of Public Health. During the fiscal year that has just closed the number of deaths from all forms of tuberculosis in the State decreased from 6,741 to 5,594, or a reduction of 1,147 deaths in a single year. These reductions in the actual number of deaths have been made in the face of a steadily increasing population, so that the tuberculosis death rate per 100,000 of population has shown a decrease that is gratifying indeed. The tabulation below shows the estimated population for the State, the number of deaths from all forms of tuberculosis, and the mortality rate per 100,000 people from tuberculosis for the years indicated:

Fiscal year.	Population.	Deaths from tuberculosis all forms.	Rate per 100,000 of population.
1917-1918	6,276,364	8,402	133.9
1918-1919	6,359,102	7,820	123.0
1919-1920	6,485,098	6,741	103.9
1920-1921	6,572,492	5,594	85.1

With the pronounced success that has so notably attended the anti-tuberculosis movement in Illinois in recent years has come the belief, on the part of the State Department of Public Health, that the time is ripe for a change in policy by extra-governmental and local agencies active in the field of tuberculosis, so that the scope of their service will be broadened and enlarged to cover general public health work in greater detail than is done at the present time. For example, it would doubtless work to the decided advantage of many counties in the State to appropriate sums of money similar to those noted above for the creation of a county department of health that would carry on all forms of public health service, including tuberculosis, rather than to limit such appropriations to tuberculosis and especially sanatorium construction work. Such a plan would not curtail in the least the tuberculosis work but would, on the other hand, bring to the people, especially those in rural districts, a public health service extensive enough to more nearly meet the crying needs that are apparent on every hand. As for sanatorium care for the tuberculous in the several counties, the plan would recommend that sanatoria already built or in the process of construction be operated in a way to accommodate patients from any part of the State for a reasonable cost per capita. The plan commends itself as a practical means of meeting the public health needs of the several counties. At the same time it will permit the continuation and extension of the present methods employed in fighting tuberculosis.

DIVISION OF ENGINEERING AND SANITATION.

HARRY F. FERGUSON, *Chief Sanitary Engineer.*

That portion of the laws prescribing the duties and powers of the State Department of Public Health and the rules adopted by the department in conformance with the act creating it which govern the activities of the Division of Engineering and Sanitation are listed on pages 54-55 of the third annual report of the department. No new laws have been enacted or rules adopted or changed during the fiscal year that affect the activities of the Division of Engineering and Sanitation and the work has, therefore, been carried out in accordance with the laws and rules presented in the third annual report.

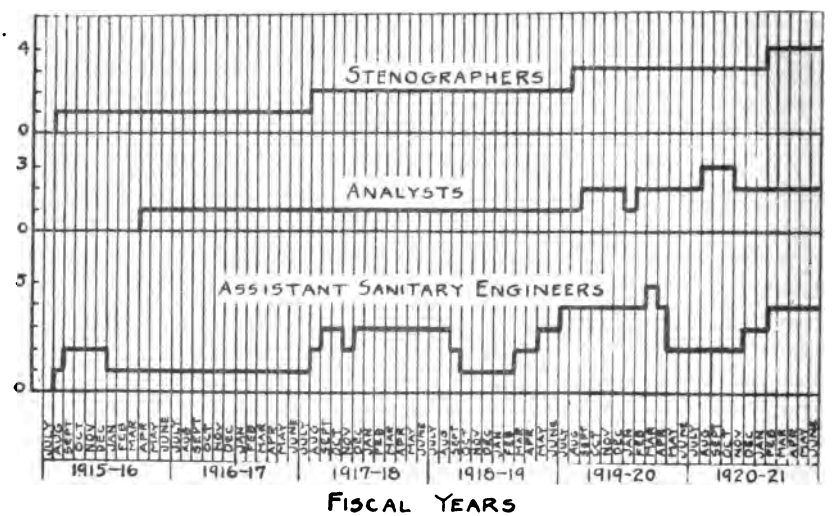

Figure XIII—Diagram showing number of technical assistants and stenographers on staff since division was established.

PERSONNEL OF THE DIVISION.

The appropriations for the fiscal year were the same as for the preceding fiscal year since the appropriations are made by the legislature for a biennium. It has not, therefore, been possible to increase the staff over that which prevailed formerly with all positions filled, but the positions that were vacant at the beginning of the fiscal year, because of resignation of some of the assistant engineers to accept positions at

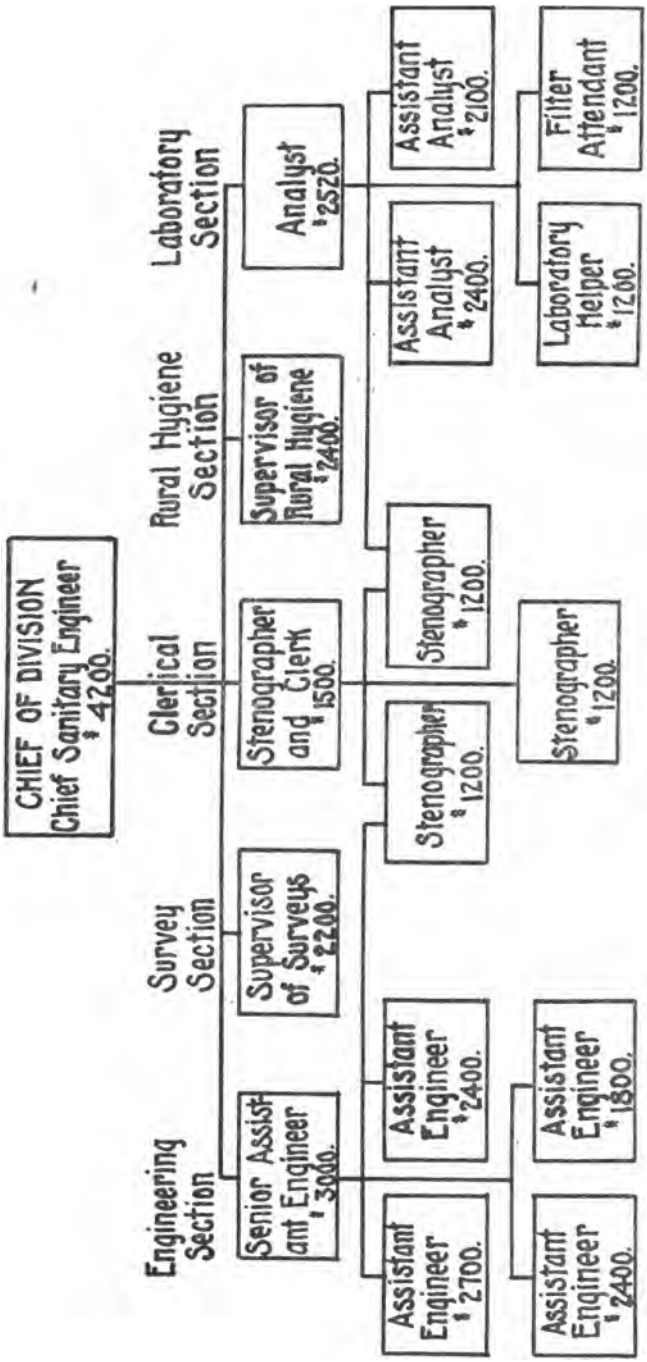

Figure XIV—Divisional organization for biennium, 1921-23.

higher salaries, have been filled. The staff, which was short three assistant engineers at the beginning of the fiscal year, comprised, at the close of the year, a chief engineer, four assistant engineers, one analyst, one assistant analyst, a laboratory helper, a water filter attendant, and four stenographers. The staff was not completed until February, 1921, and thus the division has had to handle the work with a partial staff except during the last four months. Figure XIII shows the number of assistant engineers, analysts, and stenographers on the division staff since the division was established.

With the appropriations made by the Fifty-second General Assembly (1921), which became available July 1, 1921, it will be possible to add to the staff another assistant engineer and another assistant analyst. Figure XIV shows the staff of the division for the fiscal year beginning July 1, 1921, including the two new positions soon to be filled.

ACTIVITIES OF THE DIVISION.

With no change in the laws or rules governing the activities of the Division of Engineering and Sanitation, the character of the work carried on has been the same as during the previous fiscal year. A classification of these activities is presented in the third annual report of the department on page 56. With only a partial staff during the first part of the fiscal year and changes in personnel, it was possible to give full attention only to the more important activities, and water-supply and sewerage problems have been given first consideration. With the addition to the staff during the closing months of the fiscal year it has been possible to carry on additional work.

As formerly, complete reports have been prepared on all investigations and examinations made. Copies of these reports are retained in the department files and can be consulted at any time and copies are sent, at the time they are prepared, to interested parties. These reports have of necessity been only typewritten, and since many of them would be of value if published it is again hoped that rather complete abstracts of the reports can at some time in the future be published and made available for greater use. The press of regular work has not so far permitted the preparation of such abstracts and, therefore, special requests for funds for editing and publishing reports have not been made.

WATER SUPPLIES.

First consideration is given to public water supplies, for a public water supply of good sanitary quality and adequate in quantity is undoubtedly the most important improvement in any municipality. A public water supply of questionable quality is a grave source of danger not only to residents of the city but to persons visiting the city who are not aware of its unsatisfactory quality. Assistance is given to municipalities that are installing public water supplies, improving

existing supplies, and operating waterworks systems, especially water-purification plants.

The number of field investigations made relative to public water supplies during the last three fiscal years is shown in Figure XV. The decrease in the number of assistant sanitary engineers on the staff for the first seven months of the fiscal years 1920-21, as shown in Fig. XIII, made it necessary to limit the number of investigations.

At the request of persons desiring that the waterworks in their home city be operated so as to provide a safe water at all times, a senator introduced a bill during the Fifty-second General Assembly

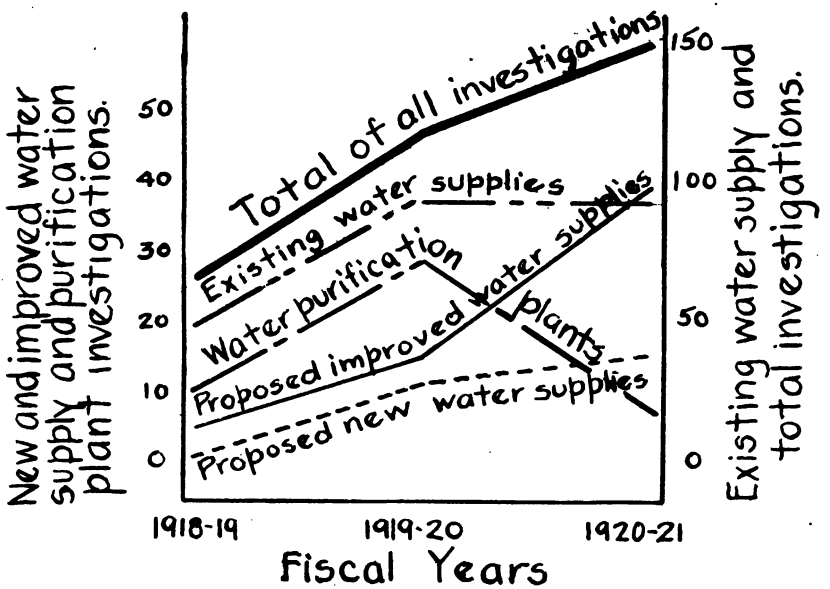

Figure XV—Number of investigations made relative to public water supplies during fiscal years 1918-19, 1919-20, and 1920-21. (See text relative to number made during 1920-21.)

that provided for the State Department of Public Health to exercise certain supervision over public water supplies. As a result of conference with representatives of the department the bill was amended to include those items found to be satisfactory in other states that had had such laws in force for a number of years. The bill passed the Senate without opposition, but unfortunately because of press of legislation it never came to a vote in the House. The activities of the division, therefore, relative to public water supplies will continue, during the coming biennium, to be the same as in the past.

PROPOSED NEW WATER SUPPLY PROJECTS.

The functions of the division in connection with new water supply projects are stated on page 57 of the third annual report. An import-

ant part of this work is the review of plans and specifications for proposed new water supplies. In reviewing proposed installations the division has the advantage of the studies made of all the existing public water supply installations in the State, and consequently the cities installing supplies are given the advantage of the experience gained in other municipalities.

The prevailing high price of materials tended to delay, as in the preceding fiscal year, the installation of new supplies. Several cities that gave consideration to making installations postponed action temporarily.

During the fiscal year installation of public water supplies was started at Erie, Hanover, and Wauconda, and investigations relative to proposed new water supplies were made by the division at the following places: Auburn 2; Dallas City, Divernon, Erie 2, Hanover 2, Frankfort, Newman, South Pekin 2, Wauconda 2, and Westville.

PROPOSED IMPROVED WATER SUPPLIES.

The increase in water consumption in a number of municipalities, caused partly by an increase in population and partly by the increased desire of people for modern sanitary conveniences, has resulted in a number of municipalities giving consideration to improved supplies. An increased public sentiment in favor of supplies of better sanitary quality and in certain instances of better mineral quality has also been a very important factor in causing a number of municipalities to give consideration to improving existing unsatisfactory supplies. The functions of the division in connection with improvement of existing unsatisfactory supplies are similar to those for proposed new supplies, and are stated on page 58 of the third annual report.

During the fiscal year 38 visits were made relative to proposed improved water supplies as compared to 15 during the preceding fiscal year. Improvements have been started or were soon to be started at practically all of the municipalities that were visited and considered improvements. The visits were made to 33 municipalities as follows:

Altamont.
Amboy.
Atlanta.
Bloomington.
Blue Mound.
Carbondale.
Charleston.
Danville 2.
Decatur 3.
Eureka.
Galena.
Gilman.
Harvard.
Litchfield 2.
Marengo.
Marion 2.
Mascoutah.
Mt. Morris.
Nauvoo.
Newton.
North Chicago.
Oakland.
Oswego.
Pana.
Pittsfield.
Princeton.
Red Bud.
Robinson.
Rockford.
Salem.
St. Anne.
Streator.
West Frankfort.

EXISTING PUBLIC WATER SUPPLIES.

The examination of existing public water supply systems and the preparation of complete descriptive reports of such water-supply systems, with special reference to the adequacy and quality of the water supplies, has been continued. In the third annual report it was stated that there were about 475 public water supplies, of which the division had knowl-

edge. In this number were included the supplies at State and Federal institutions. At the present time records have been obtained of 459 municipal water supplies and of the water supplies at 28 State institutions and the 7 Federal institutions, army posts, and naval stations.

There is under preparation a report giving the names of municipalities having public water supplies, their populations, the sources of the supplies, the treatment, if the water is treated, and a record of the sanitary quality of the water as determined by field inspections and analyses of samples. This report is to be printed in Illinois Health News and made available separately as a reprint.

The department does not have authority to require that water supplies be made of safe sanitary quality such as is given to similar departments in most of the other states having well-organized health departments. The division, however, is often instrumental in bringing about improvements by means of reports and recommendations submitted to municipal and waterworks officials as the result of examinations made by sanitary engineers of the division. Municipal and waterworks officials are in most cases glad to be advised of the results of the inspections and to follow any suggestions made and if the officials do not act they are plainly responsible for any sickness that may result from the use of unsafe supplies.

During the fiscal year 91 visits were made to municipalities to examine existing public water supplies in addition to those places previously listed where improvements were under consideration. This is the same number of visits made during the previous fiscal year. The places visited during the fiscal year were as follows:

Alton.
Beardstown.
Benton.
Bloomington 2.
Buda.
Bureau.
Carlyle.
Centralia.
Cissna Park.
Charleston.
Chester.
Christopher.
Danville.
Decatur.
DeKalb.
Deerfield.
Dwight.
Earlville.
East St. Louis.
Eldorado.
Elgin.
Franklin Park.
Freeport 2.
Geneva.
Hamilton.
Hanover.
Herrin.
Hillsboro.
Hoopeston.
Hopedale.
Joliet.
LaMoille.
LeRoy.
Lewistown.
Manhattan.
Marion.
Mattoon.
Maywood 2.
Menard.
Moline.
Momence.
Mooseheart.
Mound City.
Mounds.
Mt. Carmel.
Mt. Carroll.
Mt. Sterling.
Murphysboro 2.
Newton.
Nokomis.
Olney.
Ottawa.
Palestine.
Pearl.
Petersburg 2.
Quincy 2.
Rankin.
Ransom.
Rantoul.
Red Bud.
Rockford 4.
Roodhouse.
Rossville.
Sandwich.
Savanna.
Seneca.
Shermerville.
South Wilmington.
Spring Valley.
St. Charles.
Sterling.
Stockton.
Summit.
Tuscola.
Villa Grove.
Villa Park.
Watseka 3.
Winchester.

WATER-PURIFICATION PLANTS.

The inspection of water-purification plants which is a special phase of the examination of existing water supplies, is considered very important since improper operation of a purification plant may result in out-

breaks of sickness in a community. It was not possible at the beginning of the fiscal year to assist officials operating purification plants as much as was desired because of the limited staff, but with all positions filled at the end of the fiscal year and the increased appropriation making possible the addition of another assistant engineer and another assistant analyst to the staff, it is expected that more attention can be given to purification plants in the future and a plan adopted for regular inspections of all such plants. It will be possible to advise with the purification-plant operators and to give them the benefit of the experience gained at the other plants in the State.

During the fiscal year examinations of water-purification plants were made at Jacksonville, Marion and Salem, and of sterilization equipment only at Carlinville, Christopher and Nauvoo.

The third annual report presents in tabular form information relative to treated water supplies in the State, which table is being revised and brought up-to-date and will be published in Illinois Health News as a part of the report on public water supplies in Illinois.

SEWERAGE.

The advantages of a sanitary sewer system and the activities of the division in connection with proposed new, proposed improved, or existing sewerage installations are stated on page 60 of the third annual report. The work of the division in connection with such installations has continued the same as in the past, but it has not been possible to undertake as many examinations as the experience of the division would indicate would be desirable in order to maintain the best possible sanitary conditions in the State. It is hoped that during the coming fiscal year it will be possible to review and study the information already obtained by the division relative to existing sewerage installations and then to plan for systematic inspection of systems where information and records would indicate such to be desirable and probably result in improvement of sanitary conditions.

The number of investigations made relative to sewerage installations during the last three fiscal years is shown in Figure XVI. The decrease in the number of assistant sanitary engineers on the staff for the first seven months of the fiscal year 1920-21, as shown in Figure XIV accounts for the decrease in the number of investigations for the fiscal year 1920-21 as compared to those made during 1919-20.

PROPOSED NEW SEWER SYSTEMS.

It is easier and cheaper to have a sewer system installed properly at the start than to bring about corrections or improvements to defective systems, and full consideration is, therefore, given to proposed new installations. Plans and specifications are reviewed in accordance with the rules of the department and investigations are made relative to

proposed new installations as indicated on pages 60-62 of the third annual report.

Thirty-one visits were made relative to proposed new sewer systems as compared with 19 visits during the preceding fiscal year. The installation of several projects considered during the year has been delayed, probably in some instances because the municipalities considered

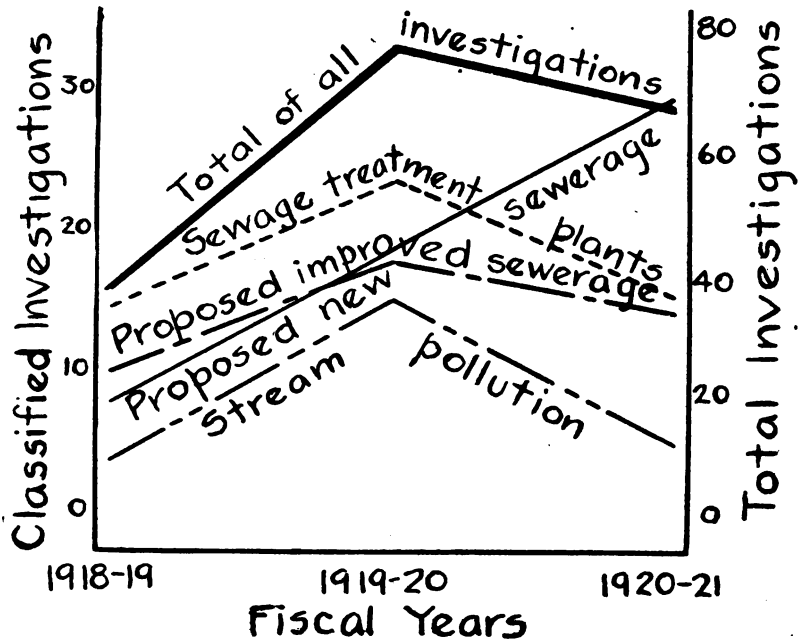

Figure XVI—Number of investigations made relative to sewerage installations during fiscal years 1918-19, 1919-20, and 1920-21. (See text relative to number made during 1920-21.)

the prevailing cost of materials still high. The municipalities visited relative to proposed sewer systems were as follows:

Amboy.
Area.**
Auburn.
Benton.
Cary.**
Deerfield.
Depue.
Divernon.
Earlville.
El Paso.
Elmhurst.**
Fairbury 2.
Farmington 2.*
Franklin Grove.
Geneseo.
Genoa Junction, Wis.
Hanover.
Maroa.
Mascoutah.
Mattoon.
Mound City.
Moweaqua.
Nokomis.
Roodhouse.
Sullivan.
Villa Park.
Wauconda 2.
Zeigler.

PROPOSED IMPROVED SEWERS.

The necessity of improving existing sewer systems to meet the increase in population in some cities and to correct difficulties caused by defective design and construction of old systems has naturally continued. The improvements to sewer systems are sometimes to provide

* Conference in Peoria and court hearing at Lewistown.
** Conference in Chicago.

improved sewerage facilities in the cities, and in other cases to eliminate local nuisances and stream pollution.

It is believed that most municipalities now installing sewer systems for the first time are giving more consideration to such installations than was generally customary a number of years ago, especially as regards the suitability of the design to meet an increase in growth. Therefore, new systems now being installed probably will not require the improvements and changes that some of the older systems, that were installed without competent engineering advice, require. In making improvements to existing systems made necessary because of faulty design or construction when the systems were installed, the municipalities in the majority of cases are taking advantage of past experience and planning the changes and additions to conform to future needs as well as to correct immediate difficulties.

A compilation of the sewer systems and sewage-treatment plants in the State has not yet been prepared from the reports and records based upon the inspections of such installations, similar to the tabulation of the water supplies, but such a tabulation is considered to be very desirable and will be undertaken as opportunity permits.

During the fiscal year 12 inspections were made relative to improved sewerage as compared to 18 during the previous fiscal year. These inspections were made at Alton, Bloomington, Decatur 2, Galva, Jacksonville, Marion,* Mooseheart, Mt. Vernon, Quincy, Rockford,* and Streator.

EXISTING SEWER SYSTEMS.

In addition to visits made relative to proposed new sewer systems or proposed improvements in existing sewer systems, visits were made to Atlanta, Palestine, and St. Charles to obtain full information relative to existing systems. Many other places must be visited before the records of the division will be complete.

SEWAGE-TREATMENT PLANTS.

The improper operation of sewage-treatment plants naturally has not as close relationship to the health of communities as the operation of water-treatment plants. Only in some cases would failure to operate a sewage-treatment plant greatly endanger the public health. The improper treatment of sewage, however, where local conditions show treatment to be desirable, may frequently indirectly affect the public health and generally give rise to insanitary conditions and nuisances, and the people naturally turn to health departments for relief from such objectionable conditions. The treatment or disposal of sewage, therefore, although not always a health measure is so closely interwoven with health and sanitary conditions that the question of sewage treatment can more properly be handled by the State Department of Public

* Conference in Chicago.

Health than any other State agency, and the department with its sanitary engineers and laboratory facilities is organized to handle such work.

In reviewing plans or making inspections relative to proposed sewerage installations full consideration is always given to whether or not a sewage-treatment plant will be necessary to prevent objectionable conditions and the amount of treatment that will be required. The functions and work of the division relative to sewage-treatment plants are stated on pages 63-64 of the third annual report.

A limited number of examinations of existing sewage-treatment plants has been possible during the fiscal year but because of the demands on the laboratory of the division for analyses of water supplies it has not been feasible to make many examinations combining field inspections and analytical determinations. Such information showing the results obtained at typical sewage-treatment plants in the State under actual operating conditions would be of value not only to the municipalities in which the plants are located but to engineers planning new installations and to the division in considering new or proposed improved installations. Further studies of sewage-treatment plants are, therefore, contemplated by the division.

During the fiscal year 16 examinations were made of sewage-treatment plants as compared with 24 during the previous fiscal year. These examinations were made at the following places:

Antioch.
Bushnell.
Bloomington (McLean County Tuberculosis Sanatorium).
Champaign.
Downers Grove.
Flossmoor.
Galva.
Great Lakes 2.
Olney.
Palestine 2.
Pontiac.
Sandwich 2.
Urbana.

STREAM POLLUTION.

The attitude of the department relative to stream pollution is indicated on page 64 of the third annual report. Stream pollution may be objectionable because of its connection with water supplies and the resultant direct effect upon public health, or because of its indirect effect upon public health, or because it simply constitutes a nuisance. Possibly the majority of cases of stream pollution at the present time may be classified merely as nuisances, but as the population of the State increases the development of water supplies from streams increases, and the relationship between health and stream pollution increases.

The department must necessarily make examinations relative to stream pollution to protect the public health, especially when public water supplies are involved, and with its laboratory facilities and sanitary engineers it can undoubtedly handle questions of stream pollution more economically than any other State agency. A division of studies of stream pollution between State agencies depending upon whether the conditions are or are not detrimental to health would eventually result in duplication of laboratory equipment, field investigations, and valuable

data and records, thus adding to the expense to the State and at the same time possibly producing lessened benefits.

During the fiscal year investigations were made of stream pollution in addition to routine investigations of sewage-disposal plants at Apple River, Bunker Hill, Chicago Heights, Flossmoor, Lewistown, and McHenry (Pistakee Bay).

TREATMENT OF INDUSTRIAL WASTES AND SEWAGES.

The attitude of the department relative to the treatment of industrial wastes and sewages is indicated on page 65 of the third annual report. During the fiscal year requests to the department have resulted in investigations being made of the treatment of industrial wastes and sewages at the following places: Apple River, dairy wastes; Chicago Heights, dye wastes; East St. Louis 2, sewage wastes; El Paso, cannery wastes; Nokomis, dairy wastes, and Sandwich, creamery wastes.

DRINKING-WATER SUPPLIES FOR COMMON CARRIERS.

The cooperative arrangement between the State Department of Public Health and the U. S. Public Health Service, perfected during the latter part of 1918, for the examination of water supplies used on interstate carriers has been continued. The method of carrying on this work is stated on pages 65-66 of the third annual report.

There are 173 common-carrier watering points now in use in 87 municipalities in the State. During the fiscal year 53 places in which one or more watering points were located were inspected and 995 samples were analyzed. The watering points examined during the year are located at the following places:

Alton 3*.
Bloomington 2.
Bluffs 1.
Buda 1.
Bureau 1.
Centralia 2.
Champaign 3*.
Chicago 29*(2).
Cissna Park 1.
Clinton 1.
Danville 4.
Decatur 5*(2).
DeKalb 1.
Dwight 1.
East Stockton 1.
Effingham 2.
Eldred 1.
Flora 1.
Freeport 3.
Galena 1.
Golconda 1.
Harvard 1.
Jacksonville 1.
Joliet 3.
LeRoy 1.
Mattoon 2.
Mendota 1.
Momence 1.
Mt. Carmel 1.
Murphysboro 2.
Ottawa 1.
Pana 1.
Pinckneyville 1.
Pittsfield 1.
Quincy 2.
Ramsey 1.
Rankin 1.
Rantoul 1.
Rockford 4*.
Roodhouse 1.
Rossville 1.
Salem 1.
Savanna 2.
Seneca 1.
Shawneetown 2.
Springfield 6 (2).
Spring Valley 1.
Staunton 1.
Sterling 1.
Streator 2.
Thebes 1.
Villa Grove 1.
Watseka 1.

The following list shows the common-carrier water supplies certified, provisionally certified, or condemned during the fiscal year:

* Entire number of watering points not inspected.
Number in parenthesis indicates number of times places were visited, and number not in parenthesis indicates number of railroad watering points.

CERTIFIED.

Beardstown.
Belleville.
Bement (b2).
Bloomington.
Bureau.
Bush (c)
Cairo.
Champaign (2).
Champaign (b*2).
Chicago (1).
Cissna Park.
Clinton.
Cypress (a).
Decatur.
DeKalb.
Dupo (f).
Dwight.
East St. Louis (2).
Effingham (2).
Flora (b).
Forrest (b).
Freeport.
Galena.
Galesburg.
Golconda (e).
Harvard (b).
Havana.
Highwood.
Hume (a).
Kankakee.
Kempton.
Mattoon (2).
Mendota.
Momence.
Mt. Vernon.
Murphysboro.
Ottawa.
Pana (a2).
Pekin.
Peoria (2).
Quincy.
Rankin (b1).
Rockford (b).
Roodhouse (b).
Rossville.
Salem (d).
Shawneetown (a1-2).
Shawneetown (b2).
Spring Valley.
Streator.
Taylorville (b).
Toluca.
Urbana (2).
Villa Grove.

PROVISIONAL CERTIFICATION.

Alton.
Anna.
Bluffs (a).
Carbondale.
Chicago (1).
Chillicothe (b).
Danville.
Eldred (a).
Granville (a).
Jacksonville (f).
Mt. Carmel.
Mounds.
Pittsfield (a).
Ramsey (a).
Rankin (b1).
Shawneetown (a1).
Staunton (b2).
Sterling.
Thebes (a).
Thebes (b).

CONDEMNED.

Pinckneyville.
Thebes (a).

NOTE.—Water from public supply unless otherwise noted. a=private well. b=railroad well. c=condensed steam. d=distilled water. e=cistern. f=tank cars filled at other points. *=two different supplies. 1=certified after necessary changes or additional information. 2=supply certified twice during fiscal year. Chicago includes certificates issued for 27 roads, including one where changes in method of handling were made.

SANITARY SURVEYS.

During the fiscal year the division made studies at Quincy, as a part of a sanitary survey conducted by the Division of Surveys and Rural Hygiene, of the water supply, sewerage and general drainage conditions, street- cleaning practice, collection and disposal of municipal wastes, and general sanitary conditions.

The Fifty-second General Assembly in making appropriations for the present biennium has eliminated the Division of Surveys and Rural Hygiene, but has continued the appropriations for this work and provided for a supervisor of surveys and a supervisor of rural hygiene to be a part of the Division of Engineering and Sanitation. It is considered that this will be a more advantageous arrangement inasmuch as rural sanitation involves primarily the question of water supplies and sewage disposal and other sanitary matters dealt with by this division, and surveys in municipalities in addition to studies of vital statistic records largely comprise activities of the Division of Engineering and Sanitation.

MUNICIPAL PLUMBING ORDINANCE.

The suggestive plumbing ordinance prepared in 1917, in accordance with section 5 of an act providing for the licensing of plumbers,

in force June 29, 1917, has been furnished municipalities and individuals upon request. Copies of most of the plumbing ordinances in the State were obtained preparatory to making a revision of the suggestive plumbing ordinance, but other work has so far not permitted such revision.

NUISANCE COMPLAINTS.

The authority of the department relative to nuisances and its policy in handling nuisance complaints are indicated on page 69 of the third annual report. During the fiscal year 518 letters were written relative to nuisance complaints as compared with 320 the preceding fiscal year. This indicates a marked increase in interest in sanitary conditions in the State. The complaints covered a wide variety of subjects and are listed in the following tabulation:

Alleged cause of nuisance.	Number of complaints.
Impure water supplies	4
Polluted wells	5
Insanitary cistern	1
Mine wash-water	1
Sewers	22
Defective sewerage	3
Sewage disposal	25
Cesspools	12
Privies	40
Toilet facilities	6
Defective drainage	44
Obstruction of water course	1
Ditch pollution	8
Stream pollution	2
Defective plumbing	3
Sink wastes	2
Human excreta	2
Dairy wastes	2
Condensory wastes	1
Corn wastes from silo	1
Cider press refuse	2
Insanitary buildings and dwellings	17
Insanitary restaurants and hotels	41
Insanitary factories	1
Insanitary schools	3
Insanitary mining camps	2
Insanitary railroad washhouse	1
Stables and barns	22
Manure	17
Hog pens	56
Chicken yards	7
Dog kennel	1
Zoo	2
Stock yards	17
Slaughter houses	13
Poultry houses	11
Meat markets	8
Rendering works	1
Fertilizer plant	3
Carcasses	16
Garbage and filth	22
Dumps	12
Weeds	2
Screens	2
Fire hazards	3
Dust, smoke and fumes	11
General insanitary conditions	40
Total	518

Some of the complaints involved conditions that required investigation, in many instances to confer with local health officials to whom

generally complaints are referred. During the fiscal year the following places were visited relative to nuisance investigations:

Place.	Cause of nuisance.
Beardstown	General insanitary conditions.
Bureau	Sewage disposal.
Caseyville	Garbage disposal.
Chicago Heights	Defective sewerage.
Collinsville	Garbage disposal.
Cowden	Inadequate drainage.
Cutler	Insanitary mine wash-water.
East St. Louis	Insanitary railroad shops.
East St. Louis	Garbage disposal.
Effingham	Dairy wastes.
Evanston	Garbage disposal.
Glenview	Defective sewerage.
Grafton	Fumes from charcoal plant.
Harrisburg	Defective sewerage.
Joliet	Inadequate drainage.
Kankakee	Fertilizer plant.
LaGrange	Defective sewerage.
Lincoln	Corn wastes from silo.
Manhattan	Inadequate sewerage.
Mt. Carroll	Inadequate sewerage facilities.
Okawville	Sewage disposal at hotel.
Pearl	Hogs.
Pontiac	Meat market.
Quincy	Garbage disposal.
Robinson	Slaughter house.
Salem	Insanitary conditions.
Sesser	Inadequate drainage.
St. Charles	General insanitary conditions.
Zion City	Inadequate sewerage facilities.

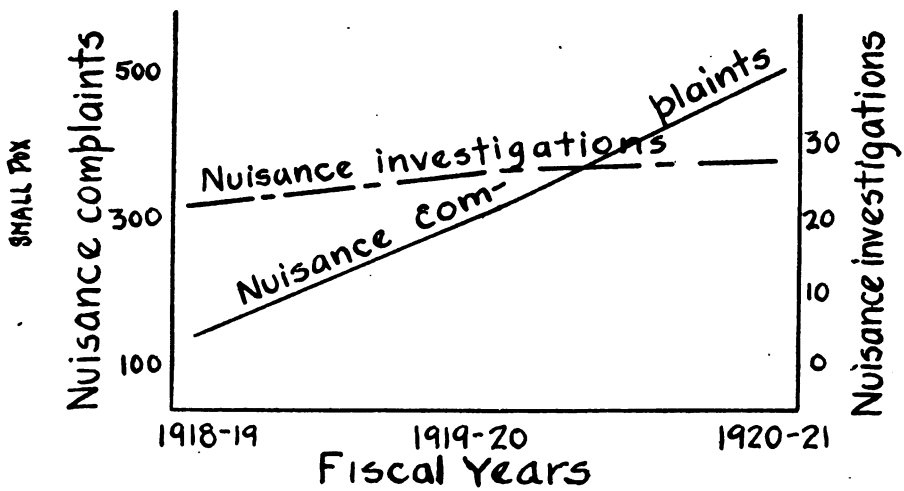

Figure XVII—Number of complaints received and investigations made relative to nuisances during the fiscal years 1918-19, 1919-20, and 1920-21.

The number of complaints of nuisances received and the number of field investigations made during the last three fiscal years are shown in Figure XVII. The number of investigations made has not increased in accordance with the increase in number of complaints received be-because of the method of handling complaints by correspondence with local health officials whenever possible.

WATER-BORNE EPIDEMICS.

During the fiscal year the epidemic of dysentery at Maywood caused by temporary pollution of the public water supply has fortunately been the only water-borne epidemic that required investigation by the division. The Maywood epidemic was caused by a cross-connection between the public water supply and a polluted industrial supply.

During the year the division has been responsible for the elimination of such cross-connections at several places and the chief sanitary engineer of the division has been a member of the committee of the State Sanitary Engineer's Association on cross-connections. The report of the committee will soon be made public.

Prevention of possible epidemics in this manner is naturally better health work than having to investigate epidemics. When inspecting public water supply systems effort is made to ascertain the existence of any dangerous cross-connections and to have the responsible officials have such eliminated. This brings out the fact that there are no material or spectacular things to show for some of the best work done by a health department. Elimination of cross-connections undoubtedly prevents epidemics, but the average person does not hear of or does not realize the value of such work, whereas help in the suppression of an epidemic always attracts popular attention.

TUBERCULOSIS SANATORIA.

The division cooperates with the Division of Tuberculosis in the examination of sites and the review of plans for county tuberculosis sanatoria, which sites and plans, according to the State law, must have the approval of the State Department of Public Health. The work of this division in this connection relates to water supplies, disposal of sewage, general drainage, and general sanitary conditions of surroundings. In some instances the availability of public water supplies and sewer systems makes the problem a rather easy one, but in other instances separate water supplies must be developed and suitable means provided for disposal of the sewage.

During the fiscal year investigations were made in connection with county tuberculosis sanatoria for DeKalb, Kane, McDonough, and Tazewell Counties.

SANITARY INSPECTIONS OF SCHOOLS.

An outline of the character of sanitary inspections of schools made by the division is given on page 71 of the third annual report. During the fiscal year sanitary inspections have been made of schools at Camargo, Carmi, Crescent City, Equality, Livingston, Manteno, Newman, Pontiac, Ray, and Serena.

MUNICIPAL WASTE COLLECTION AND DISPOSAL.

Studies of municipal waste collection and disposal and street cleaning, which are important phases of sanitary engineering but possibly

less important from the standpoint of public health than the question of public water supplies and sewerage, have been limited because of the amount of water supply and sewerage work that the division has been called upon to handle. During the fiscal year limited studies were made of municipal waste collection and disposal at Evanston and Quincy.

More work of this character is desirable not in order to regulate such work in the municipalities but rather to assemble the results obtained in municipalities in Illinois and to better advise with municipalities in regard to the methods used and the results obtained elsewhere. Municipal waste collection and disposal has been given careful and systematic consideration in but few municipalities, but there is a tendency for a desire for more thorough collection of wastes and cleaner conditions in municipalities and work of this nature will become more important in coming years.

MALARIA CONTROL BY MOSQUITO ERADICATION.

Other work has not permitted the division to initiate work in connection with mosquito eradication, although records continue to show that malaria is quite a prevalent disease in certain parts of Illinois. It is still hoped that a mosquito eradication campaign may be instituted at some place in Illinois not only to decrease malaria at that place, but to serve as an example to other communities of what can be accomplished by intelligent and systematic effort.

During the fiscal year an investigation was made relative to the prevalence of mosquitoes at Mounds, but it was found that the local pond of which complaint had been made was only a small contributory factor in the prevalence of mosquitoes in that district and that improvement of the pond would not give noticeable results unless other areas were also improved.

INSPECTION OF SUMMER RESORTS.

With the decreased staff at the beginning of the fiscal year it was not possible to make the studies of water supply, sewerage, and general sanitary conditions at the different summer resorts. It is again hoped that preceding and during the next season such work will be possible.

SWIMMING POOLS AND BATHING PLACES.

During the preceding fiscal year circular letters were sent out to obtain knowledge of the existence of swimming pools in the State and preliminary information relative to such pools and additional circular letters and questionnaire blanks were sent out during the fiscal year. A large number of replies were received and this information was utilized in the report of the Committee on Bathing Places of the American Public Health Association, of which the chief sanitary engineer of the division is a member. With the additional analytical assistance it is hoped that it will be possible during the coming fiscal year to study at least a few of the representative pools, especially to note the operation and success of different types of sterilizing plants.

LABORATORY SERVICE.

The service that the laboratories of the Division of Engineering and Sanitation is prepared to give and the character of the work handled are stated on pages 73-75 of the third annual report.

During the fiscal year a total of 2,494 samples were analyzed which is an increase of 57 per cent over the preceding year. The requests for analyses have been so great that it has been necessary at times to delay reporting the results, which delays are undoubtedly an annoyance to persons desiring the analyses and much regretted by the division. With the increased appropriations made by the Fifty-second General Assembly permitting the employment of an additional analyst it will be possible in the future to make more analyses and report results more promptly, although even with the additional analyst it will not be possible to make as frequent analyses of many of the public water supplies as would be desirable and studies by the division, involving a large amount of analytical work will, of course, have to be limited to provide for meeting the demands for routine analyses. In order to help meet the demands for analyses it has been necessary during the year to assign at times one of the assistant engineers to help in the laboratory.

The analyses made during the fiscal year classified by source and by months, are shown in the first of the following tables, and the analyses made since the laboratory work was started, classified by months, years, and major sources, are shown in the two other following tables and in Figures XVIII and XIX. The increase in the number of analyses made during the fiscal year as compared to preceding fiscal years has been possible because of having an extra assistant analyst for three months (see Figure XIV) and assigning one of the assistant sanitary engineers to help in the laboratory at times.

ANALYSES MADE DURING THE FISCAL YEAR JULY 1920-JUNE 1921—CLASSIFIED AS TO SOURCE AND BY MONTHS.

Month.	Supplies used on common carriers.		Other public supplies.	Private wells.*			**Miscellaneous.	Totals.
	Public supplies.	Private wells and other sources.		Safe.	Safe with alterations.	Unsafe.		
July	62	16	59	8	14	18	11	188
August	56	24	47	13	25	32	7	204
September	76	10	75	2	26	17	2	208
October	75	22	50	11	20	39	3	220
November	68	5	61	5	14	21	201	375
December	78	18	65	3	20	8	----------	192
January	72	33	35	11	19	5	----------	175
February	52	14	40	11	9	9	14	149
March	86	16	66	7	14	5	13	207
April	49	23	33	6	13	8	5	137
May	59	8	83	2	30	27	5	214
June	56	17	65	4	29	37	17	225
Totals	789	206	679	83	233	226	278	2,494

*Includes school wells, semi-public wells and cisterns.
**Includes analyses of sewages, ice, bottled waters and chemicals.

ANALYSES MADE SINCE LABORATORY STARTED APRIL 17, 1917—CLASSIFIED BY MONTHS.

Month.	1917	1918	1919	1920	1921	Total.
January	----------	20	14	66	175	275
February	----------	27	9	102	149	287
March	----------	37	23	159	207	426
April	11	18	35	111	137	312
May	15	23	73	167	214	492
June	9	36	70	181	225	521
July	6	54	100	188	----------	348
August	31	62	126	204	----------	423
September	14	23	160	208	----------	405
October	11	23	198	220	----------	452
November	11	7	155	375	----------	548
December	11	17	58	192	----------	278
Totals	119	347	1,021	2,173	*1,107	4,767

* Represents only six months of year 1921.

ANALYSES MADE SINCE LABORATORY STARTED APRIL 17, 1917—CLASSIFIED AS TO MAJOR SOURCES BY FISCAL YEARS.

Year.	Public water supplies (1).	Common carrier water supplies (2).	Private water supplies (3).	Sewages, trade wastes and miscellaneous.	Total.*
1917*	31	----------	2	2	**35
1917-18	125	----------	67	53	245
1918-19	186	117	186	17	410
1919-20	853	693	484	85	1,583
1920-21	1,468	995	542	278	2,494
Total	2,663	1,805	1,281	435	4,767

(1)—Including analyses made for common carriers.
(2)—Includes both public and private supplies used by common carriers. This work started August, 1918.
(3)—Includes school wells, semi-public wells and cisterns.
* Totals show correct total number of analyses, for certain public water supplies have been listed in both columns (1) and (2).
** From April 17, 1917 to June 30, 1917.

STATE HOUSE DRINKING WATER SUPPLY.

The record of the installation of pressure filters to remove the turbidity caused by iron in the Springfield public water supply which is used at the State Capitol Building is given in second and third annual reports, pages 73 and 75 respectively.

During the fiscal year 13,163 bottles of water were filled and distributed to drinking water stands throughout the Capitol Building and buildings in the vicinity used by State officers. This number compares with 10,403 bottles filled and distributed during 1919-20 and 12,961 filled during 1918-19. Whether or not the legislature is in session materially affects the number of bottles used.

EDUCATIONAL WORK.

The educational work of the division consists of preparation of articles for publication in periodicals, bulletins, and newspapers, the

making of public addresses on sanitary engineering and miscellaneous sanitary subjects, and preparation of an exhibit as a part of the exhibit of the department for the State and county fairs and local exhibits.

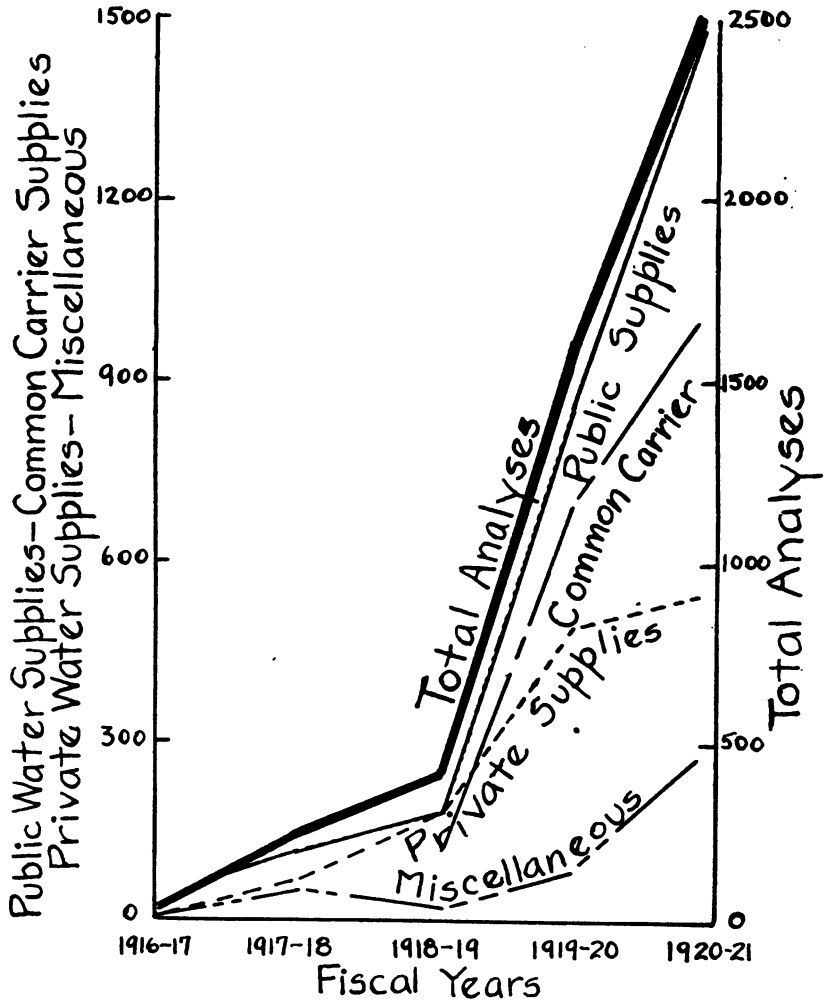

Figure XVIII—Number of analyses made each fiscal year since laboratories of division were established April, 1917.

Articles for publication must be such as to attract the interest of persons reading the respective publications and articles for newspapers must, of course, be somewhat brief and have news value. The majority of the lengthy articles have been prepared for publication in the monthly Health News issued by the department. Many of the articles for Health News are of value for permanent reference and reprints of such articles

are made so as to be available for sending out in answer to requests for information.

A considerable amount of educational work is carried on by means of correspondence. Many letters are received requesting information relative to proper construction of wells, septic tanks, small sewerage installations, and general sanitary matters. In answering letters of complaint relative to nuisances, opportunity is given to do educational work along sanitary lines.

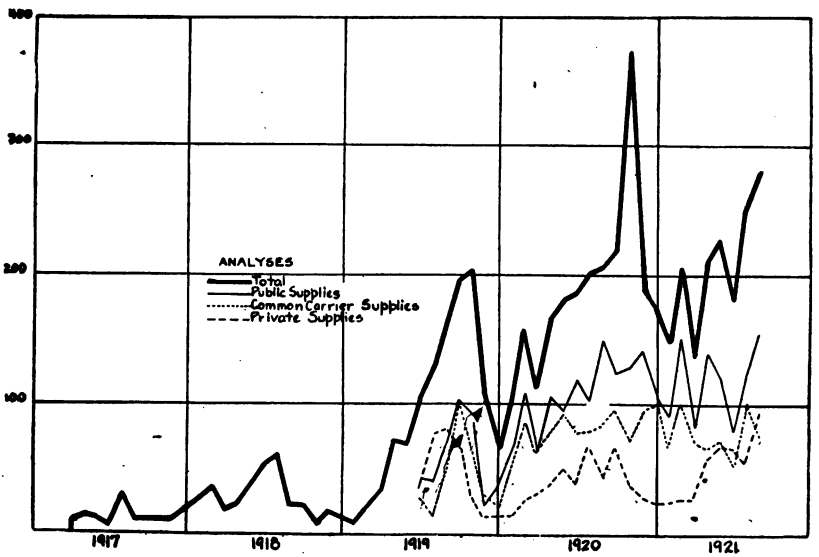

Figure XIX—Number of analyses made monthly since laboratories of division were established April, 1917.

Public addresses have been confined largely to informal talks before city councils, chambers of commerce, or other civic associations relative to water supply and sewerage projects and general sanitary improvements. During the fiscal year the following places were visited to give talks in addition to places where talks may have been given in connection with water supply or sewerage projects:

Place.	Subject.
Galva	Improved sewerage.
Mackinaw	Address at county tuberculosis sanatorium.
Mt. Vernon	Improved sewerage.
Pana	Emergency and improved water supply.
Princeton	Sanitation and sanitary ordinance.
Streator	Proposed improved sewerage.
Sullivan	Sewerage and water supply.

Meetings of the Illinois Society of Engineers, Illinois Section of the American Water Works Association, American Medical Association, American Society of Bacteriologists, and the Illinois Tuberculosis Association, and the Chicago Health Exhibit, under the auspices of the Chicago Health Department, were attended.

MISCELLANEOUS INVESTIGATIONS.

In addition to the places listed in preceding tabulations, miscellaneous investigations have been made at the following places for the purposes indicated:

Place.	Purpose of visit.
Auburn	Private well pollution.
Bushnell	Hotel inspection.
Carbondale	Swimming pool at park.
Centralia	Sanitary conditions at roundhouse.
Champaign	Sewage experiment station.
Cherry	Mine wash-water.
Clinton	School plumbing.
Creal Springs	Bottled water.
Danville 2	Hearing on water rates.
Johnston City	Sanitary inspection of coal camp.
Joliet	Water supply at Camp Harlowarden, Cherry Hill.
Lewistown	Inspection of Depler Springs.
Louisville	Hotel inspection.
McHenry	Pollution of Pistakee Bay.
Mooseheart	Plumbing and general sanitary conditions.
Nashville	Mine wash-water.
Okawville	Water supply Washington Mineral Springs.
Pocahontas	Mine wash-water.
Princeton	Sanitary ordinance.
Sandwich	School ventilation.
Smithfield	School well.
Tamms	Hotel sanitation.
Toledo	Sanitary ordinance.

SUMMARY OF ACTIVITIES FOR FISCAL YEAR.

The visits made and work done by the division are summarized in the following tabulation:

	1919-20	1920-21
Visits made and reports prepared relative to—		
Water supplies (total)	200	203
General inspection of existing public water supplies	91	91
Proposed new public water supplies	11	15
Proposed improved public water supplies	15	38
Water purification	*	6
Drinking water supplies for railroad trains	83	53
Public sewerage installations (total)	61	62
General inspection of sewer systems	**	3
Proposed new sewer systems	19	31
Proposed improved sewer systems	18	12
Sewage-treatment plants	24	16
Stream pollution	16	6
Treatment of industrial wastes and sewages	9	7
Sanitary surveys	3	1
Nusiances	27	29
Water-borne epidemics	6	1
Tuberculosis sanatoria	4	4
School sanitation	11	10
Miscellaneous subjects	15	27
Samples of water, sewage, trade wastes, etc., analyzed	1,583	2,494
Talks and addresses given and association meetings attended	14	13
Letters written (approximately)	3,200	4,800

* Not recorded separately from general inspection of public water supplies in 1919-20.
** Not recorded separately from talks and addresses in 1919-20.

RECOMMENDATIONS FOR FUTURE WORK.

The third annual report called attention to the limited funds available for the division and consequently the small staff that could be engaged to carry on the work required. The small increase in appropriations made by the Fifty-second General Assembly, which became available

July 1, 1921, will make it possible to add to the staff an assistant engineer and an assistant analyst and also, it is hoped, to retain in service the present members of the staff. It will, therefore, be possible beginning with July 1, 1921, to carry on work more thoroughly than during the past two fiscal years but the staff will still be too limited to carry on intensively all of the activities enumerated on page 56 of the third annual report.

A staff to properly meet the needs and requests for sanitary engineering work in Illinois at the present time should include, in addition to the chief sanitary engineer, at least three assistant sanitary engineers for public water supply work, two assistant sanitary engineers for sewerage work including stream pollution, an assistant sanitary engineer for common carrier water supply investigations and investigations of summer resorts, an assistant sanitary engineer for sanitary inspections of school houses and general sanitary conditions, an assistant sanitary engineer for making investigations and studies of city wastes collection and disposal including street cleaning, an assistant sanitary engineer for work in connection with malaria control by mosquito eradication who would also be available for making other inspections, two assistant sanitary engineers to prepare maps, drawings, and assist in the office, five analysts, and seven or eight stenographers and clerks.

The division is accumulating a considerable amount of information relative to water supplies and sewerage that would be of interest and value to engineers, city and water works officials, and others and, therefore, it would be beneficial to the State if funds were made available for preparation of this material for publication.

There still continues duplication by different State agencies in sanitary work which not only causes extra expense to the State, but at times is confusing to persons for whom work is being done. There is no question but that all State work in connection with sanitary control of public water supplies should be handled by the State Department of Public Health which would include both field investigations and analytical work. This duplication in field work and also in making analyses, in addition to the extra expense to the State and the confusion sometimes caused to city and water works officials and others, has at times delayed the bringing about of improved sanitary and health conditions.

At the present time there are different State agencies which are interested in or do work relative to stream pollution. Stream pollution is largely a sanitary engineering problem and naturally the State Department of Public Health must make studies relative to stream pollution because public health is frequently concerned, especially when such pollution affects public water supplies.

Stream pollution is closely interwoven with sewer systems and on that account also directly or indirectly becomes a public health matter.

The Department of Public Health is instrumental in many cases in the installation of sanitary sewer systems, and because of its close association in such work it can most economically see that sewer systems are properly planned, not only to provide adequate sewerage facilities within communities, but to prevent objectionable stream pollution.

The department with its laboratories and staff of sanitary engineers is prepared to, and naturally must, handle stream pollution work when it relates to public health and it would be the most economical and satisfactory plan to require that the State Department of Public Health do all work in connection with stream pollution. This would minimize the amount of field work and analytical work and consolidate records and information of the sanitary conditions of streams in the State in a single department.

It is not feasible or desirable for the Department of Public Health to neglect entirely stream pollution investigations because of their relationship to public water supplies, but it would be feasible for any other State agency to discontinue making stream pollution investigations, for when made by other State agencies it is because a nuisance exists and the conditions do not closely relate to any other work that the other State agencies are authorized to handle.

A bill that was introduced in the Senate at the Fifty-second General Assembly (not at the request of the department), as amended, would have clarified the powers of the State Department of Public Health relative to water supply and sewerage installations, and eventually resulted in less duplication of work by other State agencies. This bill passed the Senate but unfortunately because of press of legislation did not come to a vote in the House. The bill was quite similar to laws in force in Wisconsin, Ohio, Pennsylvania, Maryland, and many other states which are in advance of Illinois as regards sanitary legislation of this kind.

If it does not seem feasible to delegate to the Department of Public Health entire jurisdiction over stream pollution, the next best solution would be the creation of a stream pollution board to be made up of the chief sanitary engineer of the State Department of Public Health, the superintendent of waterways of the Department of Public Works and Buildings, and the chief of the Division of Fish and Game of the Department of Agriculture. Members of this board would not receive additional compensation. For the economical handling of the stream pollution investigations including analytical work, the Division of Engineering and Sanitation of the State Department of Public Health would be authorized and required to make all field investigations, obtain necessary plans, maps, etc., and to do all analytical work, and then the information obtained would be considered by the board. When the pollution was found detrimental to health the power to act would be delegated entirely to the Department of Public Health; when found

only detrimental to fish life, the board would act in conformance with the request of the Division of Fish and Game; and when the pollution was merely a matter of nuisance, the board would take direct action.

The demands upon the department for assistance in improving water supplies and regulating both proposed and existing supplies are so important that it is hoped that at the Fifty-third General Assembly a bill similar to the one introduced during the Fifty-second General Assembly will be introduced and passed.

DIVISION OF VITAL STATISTICS.

SHELDON L. HOWARD, *Registrar.*

In 1917 the Division of Vital Statistics was created under the Civil Administrative Code for the purpose of enforcing the model birth and death registration act that was placed upon the statute books in 1915. Since that time the organization of the division has grown from a force of seven employees to a personnel of twenty-four, with duties and functions as expressed in the organization chart, Figure XX. The scope of work carried out by the division was correspondingly increased, so that the close of the fiscal year, July 1, 1920-June 30, 1921, finds the vital records of the State in better condition and more comparable with those of other states than at any previous time in the history of Illinois.

When the division was organized two important objects were outlined in its policy. These were to gain admission into the United States Registration Area for deaths and births. The first of these was accomplished in 1918, and while the second has not yet been realized, such material improvement in the completeness and character of birth reports has been observed during the last fiscal year that the future seems full of hope and promise that the time is near at hand when Illinois will be recognized by the Federal Bureau of the Census as one of the registration states.

During the year more vigorous measures have been employed to bring about complete and accurate birth registration than the department has ever been able to institute before. Based upon past experiences these and other divisional activities have been carried out along the lines discussed under the various sections into which this report is divided.

VIOLATIONS.

The policy of past years in listing all reports of violations of the State law from local registrars and other sources for the subject of investigations either by field agents or correspondence has been continued. Careful records of all files are kept with special attention to cases of individuals who persistently and flagrantly fail in observing the law. These records are kept in convenient form for constant reference and for the use of the Director of the State Department of Public Health.

A list of violations for each month is prepared in quadruplicate so that copies may be placed in the hands of the Director and working copies maintained in the division for the use of the registrar, the assistant registrar and file clerks. The average number of violations per month

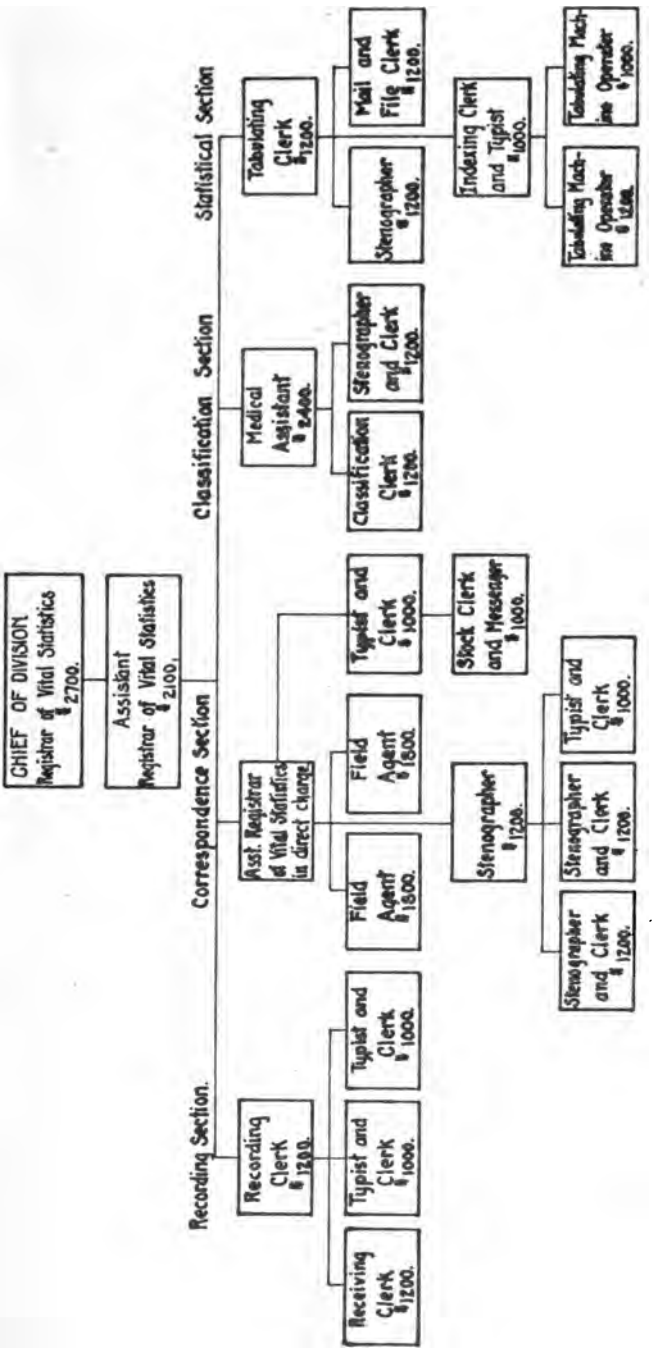

Figure XX—Divisional Organization for Biennium, 1921-23.

during the fiscal year that ended June 30, 1921, was 52 compared with 53 for the preceding year, so that the work of the assistant registrar and several of the field agents devoted to making investigations of violations, has been continued. Incidentally, whenever field agents are delegated to investigate violations of the law, they are advised also to employ every means for giving added instruction to local registrars, and in the investigation of complaints they are instructed to weigh all cases with respect to the qualifications of the registrar and the question of wilful violations.

During the year it became apparent that a large number of undertakers have habitually disregarded the law in regard to obtaining permits for burial and for disinterment and removal of bodies. To overcome this situation the division has communicated with the sextons throughout the State and has sought and obtained in a gratifying measure their cooperation in compelling undertakers to obtain proper official credentials. This is an easy matter on the part of the sexton since he can refuse burial until those in charge of burials present to him certificates properly executed. It is felt that the accomplishment of this piece of work has placed death registration upon a basis of a maximum degree of completeness.

DELINQUENTS.

Delinquent registrars, especially as their work relates to birth reports, have been the source of many and perplexing problems. One means after another has been employed to solve these problems with the result that a gradual improvement in the promptness with which birth reports are received and in the decrease of the number of delinquent registrars, has been noted. In addition to the usual procedure of immediately notifying all delinquent registrars at the end of each month, the division carried out a special campaign during the early months of the fiscal year and cleared up 221 out of 354 serious situations where reports had been incomplete or totally lacking for the six preceding months.

Lists of delinquent registrars are prepared for the information of the Director of the department at the end of each month, and additional copies of these lists are made for the information of the registrar, his assistant and the several field agents. During the fiscal year a monthly average of 283 delinquencies on the part of local registrars or 19 per cent of the total number of registrars were recorded. This corresponds very favorably with a monthly average of 340 delinquencies or 22.7 per cent of the total number of local registrars for the preceding fiscal year.

The complete investigation of a large number of cases of delinquency has brought to light the fact that many such cases result from the change in local registrars because of election, or by the removal of registrars (and these without the knowledge of the department) to other communities. This situation gives rise to the induction into office of new men who are not familiar with the law and the rules and regulations of

the department and who, therefore, innocently violate the provisions thereof. Added to these situations it has been found also that many of the local registrars have come into office without proper qualifications for carrying on work as important as that required.

To overcome these difficulties and as a means of instructing every delinquent registrar as to the scope and character of his duties, a series of form letters has been designed to answer the more common questions relating to their work. Supplemental to these, field agents have been advised to call upon all delinquent registrars in their districts and give personal instructions along the lines discussed in the form letters. It has been necessary during the fiscal year to send these letters of instruction to a fewer number of local registrars than in former years. This leads to the belief that not only the local officials, but the public in general, are coming to appreciate more intelligently and to understand better the provisions of the vital statistics law.

REPORTS OF LOCAL REGISTRARS.

During the fiscal year a marked improvement has characterized the manner in which local registrars have made their reports to the division. The habit so common in former years of transmitting to the division birth and death certificates daily or as frequently as they were received, has been almost completely overcome and has been replaced almost uniformly by the habit of sending in the certificates on the tenth day of each month as required by law. Not only has the time of sending in reports been more satisfactory than ever before, but a very marked improvement in the character of certificates of births, stillbirths and deaths has been observed also. This improvement is attributed in a large degree to the extension of various forms of educational methods used to correct errors made by the local registrars in reporting.

Another important error, that of sending certificates intended for the county clerks to the State Department of Health, so common in former years, has been practically eliminated. This has been brought about by referring back to the registrars all copies of birth certificates that were not on the original forms, along with the form letter requesting them to supply this office with the original forms and to file the duplicates with the local county clerk.

The matter of issuing annual statements for fees due to local registrars for their services has been greatly facilitated during the year as a result of a system outlined in the third annual report, whereby a transfer of credits was made for certificates wrongly forwarded to the department by local registrars in cases where fees due for registration of births or deaths that occurred outside of their districts were claimed. This system of effecting transfers of credits has worked to the decided saving of stenographic help and to the issuing of annual statements for fees with much greater dispatch than was ever possible before.

COMPLETION OF DEFECTIVE CERTIFICATES OF BIRTH.

While birth reports have gradually improved in character with the expansion and increased activities of the division, still a large number of those received from rural districts and small villages fail to contain important data. In many cases the name of the child is completely lacking. While a marked improvement has been noted during the year in this respect, still the department has outlined a policy in order to stimulate future improvements, whereby no certificates of registration of births will be issued to parents in cases where original reports are not complete in all particulars.

DEFECTIVE CERTIFICATES OF DEATH.

In the third annual report of this division it was shown that approximately 10 per cent of the death certificates received by the division were defective in one or more essential details, and that it was consequently necessary to carry on extensive communication with undertakers, local registrars and physicians for the purpose of making accurate and complete death records.

During the fiscal year just ended the continuation of the same policy has brought about a considerable improvement in the character of death certificates, although the division still finds it necessary to carry on considerable work in this respect.

MEDICAL AND OCCUPATIONAL CLASSIFICATION.

The efforts of the division to secure essential information on death certificates relative to medical classification, has borne fruit. This is demonstrated by the fact that a considerable improvement has been noted on all certificates, especially those applying to deaths from violence, casualty or undue means. Considerable difficulty still obtains, however, in reference to securing complete information relative to deaths from cancer, where it is necessary to state the primary location, and from deaths ascribed to pneumonia, broncho-pneumonia and acute nephritis, and otherwise unqualified.

Changes in the classification of deaths made by the International Conference which met in Paris last year went into effect in this State January 1, 1921. The new card gives distinctive numbers to poliomyelitis, epidemic meningitis and encephalitis lethargica, all of which are important in the administration of public health. Adoption of this new classification by the State will prove to be of decided advantage in the future study of vital statistics, since it makes them standard with National and international figures.

Since early in February, 1921, a division record has been kept of certificates which lacked medical and occupational data. During that period there were received from points outside of Chicago, 1,786 certificates that required correction in medical classification, 552 in occupational classification, and 72 in medical and occupational classification, or

a total of 2,410. During the same period a total of 16,522 certificates of death from all causes were received, so that the number for which corrections were necessary amounted to practically 16 per cent of the total.

REPORTS OF COMMUNICABLE DISEASES.

During the past year, as formerly, reports of deaths ascribed to reportable communicable diseases have been made daily to the Division of Communicable Diseases, while the reports of deaths attributed to venereal diseases have been reported daily to the Division of Social Hygiene.

REGISTRATION OF OLD BIRTH REPORTS.

A new significance that attaches to the registration of births on account of increased child labor legislation and the consequential demand for certification of births that occurred prior to the time when the present act became effective, was referred to in the third annual report. The means employed for meeting the demand for these old birth reports have been continued during the fiscal year, all local registrars being supplied with proper legal forms in all cases where these have been required. The old reports have all been properly bound and indexed, so that ready reference may be had to them at any time.

CORONER'S CERTIFICATES OF DEATH.

During the fiscal year many physicians throughout the State have continued the unlawful practice, referred to at length in the third annual report, of signing certificates of deaths from undue or violent means whereas all such cases are subject to a coroner's investigation and the certificates should bear his signature. The practice has resulted in considerable confusion of more or less legal moment and has been the subject for a great deal of correspondence on the part of the division in its efforts to make the necessary corrections.

In seeking the reason for the rather extensive and persistent nature of these errors many investigations have been carried out during the year. These have shown, almost without exception, that the source of error rests in the wording of instructions to physicians that appear on the standard death certificate blank. It has, therefore, seemed advisable to recommend to the United States Bureau of the Census that these instructions be altered and changed in a way to simplify and make more positive the regulations that govern coroner's cases, and such recommendation has been made. A procedure of this kind would, it is felt, bring about a solution of the problem that has presented many and complicated difficulties for a number of years.

DIRECTORY OF LOCAL REGISTRARS.

A complete revision of the directory and book of practical instruction of local registrars, has been made and will shortly be issued for the

use of physicians, local registrars and undertakers. It now contains full and up-to-date information necessary for the proper execution of all matters relating to birth and death registration, as well as a list of local registrars and the boundaries of districts in each case. This directory and book of instruction will be, as nearly as possible, placed in the hands of all practicing physicians in the State, outside of Chicago, and in the hands of undertakers and local registrars and district health superintendents as well.

The combination of registration districts, based upon the investigation of field agents, has continued during the past fiscal year and will continue in the future so long as it is apparent that the law can be better fulfilled. In June, 1920, there were 1,498 registration districts compared with 1,471 on June 30, 1921. These districts include 2,702 primary districts.

UNSATISFACTORY LOCAL REGISTRARS.

Unfortunately the recommendation of this division for certain changes in the vital statistics laws relative to the appointment and control over local registrars was not made by the Fifty-second General Assembly, and the unsatisfactory status that has prevailed in the past continues. In spite of every effort to the contrary many county clerks still fail to receive regularly complete and accurate copies of all certificates forwarded by the local registrars to the State Department of Public Health. The reasons for this and other highly unsatisfactory situations were pointed out in the third annual report and no means for improvement other than legislation have yet presented themselves. On the other hand, the division has been able to accomplish a considerable improvement in many respects (as described elsewhere in this report) through systematic methods of instruction which are made the more necessary on account of frequent changes in local registrars.

In this connection it is again urgently recommended that the vital statistic law be amended so that township clerks, as such, will be eliminated as registrars and that a provision be made whereby more convenient places for registration may be established and local registrars appointed without regard to township office and under more direct supervision of the State Department of Public Health. To this is added a recommendation for an amendment to the same law providing for local registrars to forward copies of certificates to the State registrar only, who will in turn make duplicate copies for county clerks and the Federal Bureau of the Census. In this way all prevailing difficulties connected with keeping accurate and uniform records in the county, State and Nation will be largely overcome and the matter placed on a basis that will insure complete accuracy in every detail with but slight, if any, increase in ultimate cost.

FIELD INVESTIGATIONS.

The two field agents of the division, one of whom is on part-time employment with the Division of Social Hygiene, have been particularly active during the fiscal year, and have not only done more effective service, but have covered more territory than ever before. The scope of their work embraces: (a) surveys of hospitals and other institutions for the purpose of obtaining complete vital statistics data; (b) investigations of conditions looking to the combination of districts; (c) settlement of disagreements in the payment of fees; (d) investigations of law violations; (e) instruction and investigation of unsatisfactory local registrars; (f) conference with undertakers, physicians and local registrars in cases where other methods have failed to secure cooperation. In addition to these things, special investigations were conducted by the field agents in 40 counties to ascertain the names of physicians who persistently fail to report births with the result that 131 delinquent names were brought to light and means employed to insure more complete reporting from them in the future.

During the fiscal year the registration districts in 84 counties were visited against 64 for the preceding year. The names of the agent assigned and the counties visited are:

F. C. BLANDIN.

Adams.
Boone.
Brown.
Bureau.
Carroll.
Champaign.
DeKalb.
DeWitt.
DuPage.
Ford.
Fulton.
Grundy.
Hancock.
Henderson.
Henry.
Iroquois.
JoDaviess.
Kane.
Kankakee.
Kendall.
Knox.
Lake.
LaSalle.
Lee.
Livingston.
Logan.
Macon.
Marshall.
Mason.
McDonough.
McLean.
McHenry.
Mercer.
Ogle.
Peoria.
Piatt.
Rock Island.
Schuyler.
Stark.
Stephenson.
Tazewell.
Vermilion.
Warren.
Whiteside.
Will.
Winnebago.
Woodford.

DR. H. T. BURNAP.

Adams.
Bond.
Cass.
Christian.
Clinton.
Clay.
Coles.
Cumberland.
Edwards.
Effingham.
Greene.
Hamilton.
Jackson.
Jefferson.
Jersey.
Lawrence.
Macoupin.
Madison.
Marion.
Menard.
Monroe.
Morgan.
Montgomery.
Moultrie.
Perry.
Pike.
Randolph.
Richland.
Sangamon.
Scott.
Shelby.
St. Clair.
Wabash.
Washington.
Wayne.
White.
Williamson.

Due to these personal visits by the field agents the division has on file a great deal of invaluable information relative to local conditions that serves as a guide in clearing up problems that otherwise would be extremely difficult of solution. The activity of the field agents has also resulted in obtaining a greater and a more cordial cooperation from

all those people upon whom the department must largely depend for fulfilling the provisions of the vital statistic laws. It is believed that a more extensive amount of personal contact with local registrars and others (which might be brought about through agreement with the Division of Communicable Diseases whereby district health officers could frequently be assigned to this work), would be the quickest and surest means for overcoming many of the difficulties and problems that have always been associated with the collection of vital statistic records and would hasten the day when birth reports would be filed sufficiently complete to make Illinois eligible for the Federal Registration Area.

INDEXING AND TABULATING.

The office machinery for indexing and tabulating all certificates of deaths, births and stillbirths, has been so organized and extended during the fiscal year that this matter is now for the first time carried on as a regular routine activity. Heretofore the limited office facilities made it possible to index only death certificates, but since January 1, 1921, birth certificates have also been indexed. At the close of the fiscal year all death certificates from the State, outside of Chicago, for 1920 had been indexed and the close of the next fiscal year will find the same thing true of both death and birth certificates for 1921.

As a result of the system now in operation the division has available for immediate reference any data provided for on the standard certificate of death pertaining to deaths that occurred in the State, outside of Chicago, during 1919 and 1920. This information is comparable in every detail with that of any territory included in the Federal Registration Area. The same kind of data will be available in the future for both births and deaths, but the former will not be comparable with figures for units in the Federal Registration Area until the State has been admitted into that area for births.

STATISTICAL REPORTS.

During the fiscal year the demand for various statistical reports has been greater than usual. Of particular interest and importance among these was the tabulation of infant mortality in the State for 1920, and the working out of figures showing the number of births reported compared with the number that probably actually occurred. Other reports that carry unusual interest are:

Mortality record of Illinois, showing deaths (exclusive of stillbirths) from all causes and from diseases of major sanitary importance, by counties and by principal cities and towns, for July 1, 1920-June 30, 1921, inclusive. This table has been arranged to include all cities of the State which had 10,000 or more population according to the census of 1920. (See table 7, p. 98.)

A record by counties and principal cities and towns of all births reported for the fiscal year 1920-1921. (See table 8, p. 104.)

A summary of the statistics of births and deaths (exclusive of stillbirths), for Illinois with rates per 1,000 population (revised in accordance with the census of 1920) for the years 1916-1920, inclusive. (See table 9, p. 106.)

A table that indicates the probable degree of completeness of birth and death registration for the calendar years of 1919 and 1920, and shows the probable deficiencies in the number of births reported for these years from the State, city of Chicago, and State exclusive of Chicago. (See table 12, p. 114.)

A comparison of the annual mortality summaries for Illinois, for the years 1917-1920, inclusive, covering the diseases reportable to the United States Public Health Service. (See table 10, p. 107.)

Deaths of infants, (exclusive of stillbirths) by color, by nativity of white mother and by counties and principal cities and towns during the year 1920. (See table 10a, p. 108.)

Deaths, all causes, by months, cause and color by counties, during the year 1919.

Deaths, all causes, by months, cause and color by principal cities and towns during the year 1919.

Deaths, due to the puerperal state, by age groups, color, nativity of whites and by counties.

In addition to the above, numerous mortality tables for minor districts and cities, rate tables and comparative tables, were compiled in response to requests received from various sanitary engineers, physicians, public health nurses, collegiate instructors, public school teachers and pupils, and considerable data bearing on accidents, etc., was furnished to certain technical trade papers and health papers for publication.

COOPERATION WITH OUTSIDE ORGANIZATIONS.

Throughout the year the division has continued to render all possible assistance to various organizations of the country which desired aid in statistical studies. The organizations chiefly served were: The United States Public Health Service; the Children's Bureau; the Eastern and Central divisions of the American Red Cross; the State Committee on Tuberculosis and Public Health of the State Charities Association, and the National and State Tuberculosis Associations.

MISSIONARY WORK.

Under the head of missionary work all the educational work accomplished through other than regular channels is included. This consists of such items as public addresses by members of the division, discussions at intra-departmental conferences of various characters, material for the public press and exhibits prepared for public display. During the year a great deal of time and effort has been devoted to work along these lines, and it is believed to have had a decidedly beneficial effect upon the public mind.

The exhibit material prepared by the division seems particularly worthy of note. Various kinds of attractive wall panels and charts that depict the more important vital statistic subjects were designed and displayed on a number of occasions where visitors from all over the State were present. This equipment, sufficient in quantity to utilize the space in a booth 20 feet long and 10 feet deep, has attracted widespread and favorable attention and has already been reserved for use in a large number of communities during the coming year.

REGISTRATION IN COOK COUNTY.

Since the population in Cook County is equal to nearly half of that of the entire State, the registration of births and deaths in that county has an important bearing upon the records of the State. It is, therefore, very gratifying to note that during the fiscal year Cook County

showed a very marked improvement along all lines of vital statistic reports.

The improvement has been due largely to two reasons. First, all local registrars (of whom there are more than 80) have received settlement for all back fees and arrangements have been made whereby fees will be more promptly paid in the future. Second, the health department in Chicago has carried out a vigorous campaign relative to birth registration that resulted in a great increase in the completeness of returns.

BIRTH REGISTRATION.

Engraved certificates of birth registration that were designed by the department and placed in the hands of the division to be filled out and forwarded to the parents of all children whose births are properly recorded, have not been issued with the dispatch desired, because of insufficient clerical help. On the other hand, the proposition presents such great possibilities for stimulating favorable public opinion in behalf of complete and satisfactory birth registration that arrangements have recently been made at the suggestion of the new Director of Public Health, to secure the cooperation of all divisions of the department in carrying out the program in a creditable fashion. The forms have also been improved so that their value to the parents and the children concerned will be greatly enhanced.

Two pieces of new work that have an unusually important bearing upon satisfactory birth registration have been accomplished during the year. One was the completion of a directory that embraces all hospitals and institutions in operation in the State. This book, that has already become of invaluable service in facilitating the work of the division in correcting errors in birth reports, was completed only after a prolonged task of the most painstaking and tedious nature.

The other piece of work grew out of and was made possible by the first. Placards of an attractive character, designed for the purpose of calling constantly to the attention of physicians the importance of carefully observing the birth registration law, were distributed and caused to be prominently posted in the more than 600 institutions listed in the directory. This work, as well as that relating to death certificates from institutions, was greatly facilitated through the hearty cooperation that was obtained from the State Department of Public Welfare. Communications already received, together with a noticeable improvement in the character and completeness of statistical reports from a large number of the institutions, lead to the belief that the task was well worth the time and efforts spent.

BINDING AND FILING CERTIFICATES.

During the fiscal year the division found it advisable, for the first time, to undertake the binding of all certificates on hand for the years

1916 to 1920, inclusive. This work had been postponed from year to year because, for one reason or another, a considerable number of old certificates continued to be received. It became apparent during the latter part of the year, however, that records for past years were as nearly complete as could ever be expected so that the work of binding was undertaken and completed.

The system of numbering and filing certificates in the chronological order of their receipt, adopted on January 1, 1921, has proved to be entirely unsatisfactory from every standpoint, due in large measure to the unavoidably delayed reports from many quarters. It is, therefore, strongly recommended that the old system of filing together, by months and irrespective of time of receipt, all certificates from each county be readopted. Experiences, both in this and other states, have demonstrated that the latter is the most practical system of filing that has yet been devised.

POPULATION REVISIONS.

On the basis of the fourteenth Federal census that was taken in January, 1921, the division has made a complete revision of population figures for the various political units of the State. It is interesting to note that 46 counties showed an increase and 56 a decrease in population, compared with the 1910 census. Revised estimates of the population of all counties and principal cities in the State for each six months period since July 1, 1915, are now available.

CONCLUSION.

In conclusion it may be said that the work of the division during the fiscal year has been more extensive in scope and more efficient in character than for any previous year. For this the new Director of Public Health deserves no little credit since he has from the first exercised a deep interest in the work and has offered many and valuable suggestions. The Civil Service Commission is also commended for its uniform success in filling the vacancies in the division with exceptionally capable employees. It is believed that the extension of the policies that have been worked out during recent months will result in placing the vital statistic records of Illinois among the best and most complete in the country.

TABLE 7—MORTALITY RECORD OF ILLINOIS, DEATHS, (EXCLUSIVE OF STILL-IMPORTANCE, BY COUNTIES, AND PRINCIPAL CITIES

Counties with important cities and towns.	Estimated population Jan. 1, 1921 (mid-year).	Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
				Typhoid Fever.	Malaria.	Smallpox.	Measles.	Scarlet Fever.	Whooping Cough.
The State	6,572,492	71,034	10.8	370	76	29	353	361	549
Adams	[1]62,188	835	13.4	5			9	2	3
Quincy	[1]55,978	478	13.5	2			6		1
Alexander	24,108	322	13.4	9	2				3
Cairo	15,271	247	16.2	6	1				3
Bond	[1]16,045	136	8.5	3	2			1	4
Boone	[1]15,322	157	10.2	1				1	1
Brown	[1]9,336	78	8.4	1					
Bureau	[1]42,648	391	9.2	1			3	1	2
Calhoun	[1]8,245	70	8.5	1					1
Carroll	19,479	125	6.4						
Cass	17,950	150	8.4	1	1		1	2	
Champaign	57,487	526	9.1	1	1		1	1	3
Champaign	16,229	202	12.4					1	1
Urbana	10,450	235	(2)	1					
Christian	38,856	416	10.7	2			1	1	2
Clark	[1]21,165	195	9.2	1	2				3
Clay	[1]17,684	160	9.0	1	1	2	3		
Clinton	22,959	198	8.6	1			2	1	10
Coles	35,168	418	11.9	4					5
Mattoon	13,768	198	14.4	3					2
Cook	3,119,741	34,535	11.1	30	1	2	146	188	164
Berwyn	15,006	256	(3)				31		
Blue Island	11,772	279	(2)				1	6	2
Chicago	2,754,899	30,028	10.9	26	1		138	168	150
Chicago Heights	20,181	224	11.1	1				4	5
Cicero	48,131	302	6.3				4	2	4
Elgin	(4)	(4)							
Evanston	38,496	411	10.7	2				2	3
Forest Park	11,198	349	(3)						
Maywood	18,488	256	(3)						
Oak Park	41,960	519	12.4				1	3	
Crawford	[1]22,771	223	9.8	2		2	1	3	3
Cumberland	[1]12,858	118	9.2	1				1	
DeKalb	[1]31,339	314	10.0	1					2
DeWitt	19,288	210	10.9	3			1	1	6
Douglas	19,738	163	8.3	5				1	4
DuPage	43,014	297	6.9					3	1
Edgar	[1]25,769	317	12.3	1			2		7
Edwards	[1]9,431	97	10.3	1			1	2	3
Effingham	[1]19,556	185	9.5	2			1		2
Fayette	[1]26,187	222	8.5	5			1		5
Ford	[1]16,466	148	9.0	2				1	1
Franklin	60,523	511	8.4	12	2	1	4		4
Fulton	[1]48,163	504	10.5	1	1	1		5	2
Canton	10,976	156	14.2					1	1
Gallatin	[1]12,856	98	7.6	3	3		3		1
Greene	22,937	194	8.5	3					
Grundy	[1]18,580	176	9.5	1					2
Hamilton	[1]15,920	166	10.4	5	1	1			2
Hancock	[1]28,523	279	9.8	2			2		2
Hardin	7,587	66	8.7	4			5		
Henderson	9,774	77	7.9						1
Henry	45,514	475	10.4	5		1	2	6	6
Kewanee	16,718	2101	(2)	1			2	2	1
Iroquois	34,841	356	10.2	2				3	3
Jackson	137,291	410	11.0	9	9	1	1		6
Murphysboro	11,035	354	(3)	32	32				32
Jasper	[1]16,064	87	5.4	2					2
Jefferson	[1]28,480	355	12.5	12	1		9	1	9
Jersey	[1]12,682	117	9.2	3			2		

BIRTHS) FROM ALL CAUSES, AND FROM DISEASES OF MAJOR SANITARY AND TOWNS, JULY 1, 1920-JUNE 30, 1921 INCLUSIVE.

Diseases of major sanitary importance.

Diphtheria.	Influenza.	Rabies (in man) Hydrophobia.	Pulmonary Tuberculosis.	Tuberculosis—other forms.	Chronic Bronchitis.	Cerebro Spinal Fever (Epidemic Cerebro Spinal Meningitis).	Acute Anterior Poliomyelitis (Infantile Paralysis).	Pneumonia—all forms.	Septic Sore Throat	Syphilis.	Gonococcus Infection.
1,243	597	2	4,939	655	259	63	66	4,948	190	419	41
4	5	.....	48	5	3	.....	.....	31	4	3	1
1	2	.....	30	4	.....	.....	.....	19	4	3	1
3	8	.....	33	7	1	.....	.....	14	.....	3	3
1	6	.....	22	5	1	.....	.....	11	.....	2	3
2	1	.....	9	1	.....	.....	1	13	.....	1	.....
2	3	.....	6	2	1	.....	1	9	1	.....	1
.....	1	.....	3	1	.....	.....	.....	9	.....	.....	.....
7	4	.....	19	4	1	1	.....	31	.....	.....	.....
.....	1	.....	4	1	.....	.....	.....	6	1	.....	.....
.....	.....	.....	3	1	1	.....	.....	11	.....	1	.....
1	5	.....	4	2	.....	.....	3	17	.....	1	.....
2	8	.....	22	2	1	.....	1	39	3	5	.....
1	2	.....	7	1	1	.....	1	14	1	4	.....
1	1	.....	7	1	.....	.....	.....	3	2	1	.....
5	7	.....	17	4	2	.....	1	35	2	2	.....
2	1	.....	14	2	.....	.....	.....	17	1	.....	.....
3	1	.....	16	2	.....	.....	2	10	.....	1	.....
6	3	.....	15	2	1	.....	.....	11	.....	1	.....
2	2	.....	30	8	.....	.....	.....	28	7	4	.....
.....	1	.....	11	2	.....	.....	.....	15	4	4	.....
762	151	2	2,595	345	111	30	11	2,545	34	218	12
[31]	.....	.....	[3]10	[31]	.....	.....	.....	[31]	.....	.....	.....
5	.....	1	1	1	.....	.....	.....	13	1	.....	1
698	124	1	2,049	298	99	28	8	2,254	20	198	9
4	3	.....	9	3	1	.....	.....	24	2	.....	.....
7	.....	.....	21	2	1	1	1	26	1	1	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	1	.....	19	4	1	1	2	20	.....	.....	1
[32]	.....	.....	[3]5	.....	.....	.....	.....	[3]5	.....	.....	.....
[31]	.....	.....	37	.....	.....	.....	.....	[3]4	.....	.....	.....
6	8	.....	14	2	1	.....	.....	30	2	2	1
2	4	.....	10	1	.....	2	.....	23	.....	.....	.....
4	1	.....	10	2	.....	1	.....	14	.....	.....	.....
.....	3	.....	15	4	.....	.....	.....	17	1	1	.....
4	3	.....	9	.....	1	1	.....	17	1	1	1
1	2	.....	11	.....	1	.....	.....	7	1	.....	.....
9	1	.....	18	1	.....	.....	1	22	3	.....	.....
3	3	.....	19	1	.....	1	1	9	.....	.....	.....
2	1	.....	7	1	.....	.....	.....	3	.....	.....	.....
2	.....	.....	15	3	.....	.....	.....	13	1	6	.....
4	4	.....	21	3	.....	.....	.....	18	.....	.....	.....
.....	.....	.....	5	2	1	1	.....	9	1	1	.....
16	7	.....	35	5	1	.....	1	48	1	7	.....
8	22	.....	24	4	.....	1	.....	33	4	3	.....
2	10	.....	6	1	.....	.....	.....	6	2	.....	.....
5	.....	.....	8	2	1	.....	.....	4	.....	.....	.....
.....	3	.....	11	3	.....	.....	1	11	.....	.....	.....
1	6	.....	8	1	.....	.....	1	12	.....	1	.....
5	3	.....	21	1	1	.....	.....	19	2	.....	.....
2	9	.....	10	4	5	.....	.....	11	1	.....	.....
4	.....	.....	11	.....	1	.....	.....	4	.....	.....	.....
.....	4	.....	2	.....	.....	.....	.....	7	.....	.....	.....
16	8	.....	26	6	1	1	1	33	5	.....	1
14	2	.....	4	3	1	1	.....	11	2	.....	.....
4	3	.....	10	4	.....	1	.....	18	.....	2	1
12	5	.....	33	2	2	1	.....	24	2	7	.....
[32]	.....	.....	37	.....	.....	.....	.....	[3]5	.....	[32]	.....
1	.....	.....	7	.....	.....	.....	.....	3	.....	.....	.....
5	3	.....	43	2	2	1	2	28	2	.....	.....
.....	3	.....	7	1	.....	.....	.....	5	.....	1	.....

TABLE 7—

Counties with important cities and towns.	Estimated population Jan. 1, 1921 (mid-year).	Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
				Typhoid Fever.	Malaria.	Smallpox.	Measles.	Scarlet Fever.	Whooping Cough.
JoDaviess	[1]21,917	213	9.7					1	1
Johnson	[1]12,022	85	7.1		1				1
Kane	100,285	1,390	13.9	6			11	3	6
Aurora	*37,075*	*455*	*12.3*	*3*			*1*	*1*	*4*
Elgin	*27,606*	[3]*627*	*23.7*				*2*		*1*
Kankakee	45,372	703	15.5	2			4	1	5
Kankakee	*17,039*	*215*	*12.6*	*2*				*1*	*4*
Kendall	[1]10,074	95	9.4						1
Knox	46,785	509	10.9	4			2	5	3
Galesburg	*24,014*	*309*	*12.9*	*3*			*2*	*4*	*1*
LaSalle	92,213	1,027	11.0	4	1		6	5	10
LaSalle	*13,206*	*173*	*13.1*	*3*					*2*
Ottawa	*10,948*	*281*	(2)					*1*	*1*
Streator	*14,833*	*205*	*13.8*	*1*			*4*		*1*
Lake	76,265	741	9.7	11			13	7	8
Waukegan	*19,552*	*205*	*10.5*	*2*			*2*	*1*	*4*
Lawrence	[1]21,380	200	9.4	4	3		3	2	5
Lee	28,030	245	8.7					4	1
Livingston	[1]39,070	324	8.3				1	2	4
Logan	[1]29,562	319	10.8	1	1			3	4
Lincoln	*11,984*	*195*	*16.3*		*1*			*2*	*1*
McDonough	27,094	273	10.1	1				1	1
McHenry	33,232	357	10.7						2
McLean	70,323	813	11.6	5		2	6	6	10
Bloomington	*39,029*	*383*	*13.2*	*4*			*5*	*1*	*4*
Macon	66,307	729	11.0	6	1	1		2	6
Decatur	*45,124*	*571*	*12.7*	*6*		*1*			*3*
Macoupin	57,952	483	8.3	4			9	2	10
Madison	108,651	1,200	11.0	8	3	5	3	15	15
Alton	*26,418*	*284*	*11.2*	*3*	*1*			*2*	*2*
Granite City	*15,257*	*166*	*10.9*	*2*		*2*	*2*	*1*	*2*
Marion	37,745	409	10.8	5	1		2		7
Centralia	*12,781*	*270*	(2)		*1*				*1*
Marshall	[1]14,760	129	8.7	2				3	
Mason	[1]16,634	142	8.5	2					
Massac	[1]13,559	144	10.6	3		1	2		5
Menard	[1]11,694	100	8.6				1	4	
Mercer	[1]18,800	175	9.3	1			2		
Monroe	[1]12,839	66	5.1	3				1	1
Montgomery	42,031	469	11.2	4			5	1	1
Morgan	[1]33,567	575	17.1	1			4	2	2
Jacksonville	*15,753*	*448*	*28.4*	*1*			*2*		*1*
Moultrie	14,861	137	9.2				2		2
Ogle	[1]26,830	275	10.2					4	3
Peoria	112,890	1,456	13.3	7	1	1	1	14	11
Peoria	*77,065*	*1,033*	*13.4*	*5*	*1*			*5*	*4*
Perry	22,985	253	11.0	6			1		5
Piatt	[1]15,714	107	6.8					3	2
Pike	[1]26,866	245	9.1	1			1	1	
Pope	[1]9,625	97	10.1	3					
Pulaski	[1]14,629	174	11.9	4	5		1	1	
Putnam	7,581	62	8.2					1	1
Randolph	[1]29,109	255	8.8	7	1			1	8
Richland	[1]14,044	177	12.6	6		1		1	
Rock Island	94,553	968	10.2	5	1	1	1	1	8
Moline	*31,408*	*316*	*10.1*	*2*					*3*
Rock Island	*36,293*	*334*	*9.2*	*3*	*1*	*1*		*1*	*3*
St. Clair	138,232	1,424	10.3	10	5	1	3	4	25
Belleville	*25,205*	*273*	*10.8*		*1*				*4*
East St. Louis	*67,613*	*768*	*11.4*	*6*	*3*	*1*	*2*	*2*	*21*
Saline	39,193	381	9.7	7	3		24		5
Sangamon	101,214	1,240	12.3	7	1		8	14	4
Springfield	*59,957*	*878*	*14.6*	*5*	*1*		*2*	*11*	
Schuyler	[1]13,285	132	[4]99	1	1				1

Continued.

Diseases of major sanitary importance.

Diphtheria.	Influenza.	Rabies (in man) Hydrophobia.	Pulmonary Tuberculosis.	Tuberculosis—other forms.	Chronic Bronchitis.	Cerebro Spinal Fever (Epidemic Cerebro Spinal Meningitis).	Acute Anterior Poliomyelitis (Infantile Paralysis).	Pneumonia—all forms.	Septic Sore Throat.	Syphilis.	Gonococcus Infection.
	2		11	1				19			
4			8	1	1			5	1		
8	16		80	17	5	1		79	4	4	
5	*5*		*21*	*7*	*4*	*1*		*24*	*2*	*2*	
3	*5*		*39*	*6*				*31*	*1*	*2*	
8	4		74	5	5			32	3	1	
	1		*12*	*3*				*14*	*2*		
	1		3		2			6			
2	3		23	5	2			29	2	7	
1	*2*		*14*	*3*	*1*			*18*	*2*	*3*	
7	5		68	4	5	2	2	79	5	2	
			6	*1*				*15*	*2*	*1*	
1			*9*	*1*	*1*			*11*			
	2		*6*		*1*	*1*		*24*			
6	11		32	5	2	3	4	53	2	4	
	2		*9*				*1*	*10*	*2*	*2*	
3	1		13	2	1			14	1	1	
1	2		14	3				13			
3	3		10	2	4		1	22	1	1	
1	7		35	1	2			30	2	2	
	3		*30*	*1*				*16*	*2*	*1*	
1	5		16	3	1			11	1	4	
5	4		24	2	2		1	25	1	1	
9	5		44	4	3	1	1	45	3	2	
2	*2*		*22*	*3*	*1*	*1*		*24*	*3*	*1*	
17	8		41	5	1			45	1	10	1
16	*6*		*32*	*5*				*37*	*1*	*9*	*1*
9	12		15	1	5	1	1	41	1	2	
25	15		74	10	8		3	70	6	9	
15	*2*		*18*	*1*	*2*			*15*	*1*	*1*	
	1		*14*	*1*			*1*	*4*	*2*	*3*	
4	8		25	3	2			23	1	1	1
3	*1*		*5*					*6*		*1*	
3	1		8	1		1		9			
	1		12	2				8			
6			18					9	2	2	
1	1		8	2				5		1	
	1		5					11			
	1		3		2			4			
4	7		24	2	2	1		27	3	4	1
1	1		37	5				56		10	1
	1		*34*	*1*	*1*			*31*		*9*	*1*
			7		4			10			
1	5		6	1				19			
27	20		105	8	2	1	3	96	6	16	2
24	*14*		*43*	*6*	*2*	*1*	*3*	*70*	*6*	*13*	*2*
2	5		10	2	4			9	1	3	
3	2		7	4	1			6			
4	1		6	3				17	1		
2	1		7	2	1			3	1	1	
6	1		20	2			2	13			
	1		3	1				5			
5			19	4	3		2	16	1	1	
4			14	1				5	1	1	1
5	4		67	11	6		1	60	8	7	1
2			*20*	*5*	*3*			*15*	*2*	*2*	*1*
2	*3*		*24*	*6*	*1*		*1*	*21*	*6*	*1*	
21	12		98	11	9	2	3	113	5	15	2
	2		*20*	*2*	*2*			*22*		*1*	
7	*5*		*55*	*9*	*2*	*2*	*3*	*67*	*5*	*10*	*2*
19	12		39	2	2		1	39	4	1	1
7	16		132	7	4		4	88		10	4
2	*9*		*48*	*4*	*3*		*3*	*60*		*10*	*4*
	1		12	1				14			1

TABLE 7—

Counties with important cities and towns.	Estimated population Jan. 1, 1921 (mid-year).	Deaths—all causes.	Death rate per 1,000 population.	Diseases of major sanitary importance.					
				Typhoid Fever.	Malaria.	Smallpox.	Measles.	Scarlet Fever.	Whooping Cough.
JoDaviess	[1]21,917	213	9.7					1	1
Johnson	[1]12,022	85	7.1		1				1
Kane	100,285	1,390	13.9	6			11	3	6
Aurora	*37,075*	*455*	*12.3*	*3*			*1*	*1*	*4*
Elgin	*27,606*	[5]*627*	*22.7*				*2*		*1*
Kankakee	45,372	703	15.5	2			4	1	5
Kankakee	*17,039*	*215*	*12.6*	*2*				*1*	*4*
Kendall	[1]10,074	95	9.4						1
Knox	46,785	509	10.9	4			2	5	3
Galesburg	*24,014*	*309*	*12.9*	*3*			*2*	*4*	*1*
LaSalle	92,213	1,027	11.0	4	1		6	5	10
LaSalle	*13,206*	*173*	*13.1*	*3*					*2*
Ottawa	*10,948*	[2]*81*	(2)					*1*	*1*
Streator	*14,893*	*205*	*13.8*	*1*			*4*		*1*
Lake	76,265	741	9.7	11			13	7	8
Waukegan	*19,552*	*205*	*10.5*	*2*			*2*	*1*	*4*
Lawrence	[1]21,380	200	9.4	4	3		3	2	5
Lee	28,030	245	8.7					4	1
Livingston	[1]39,070	324	8.3				1	2	4
Logan	[1]29,562	319	10.8	1	1			3	4
Lincoln	*11,984*	*195*	*16.3*		*1*			*2*	*1*
McDonough	27,094	273	10.1	1				1	1
McHenry	33,232	357	10.7						2
McLean	70,323	813	11.6	5		2	6	6	10
Bloomington	*25,029*	*383*	*15.2*	*4*			*5*	*1*	*4*
Macon	66,307	729	11.0	6	1	1		2	6
Decatur	*45,124*	*571*	*12.7*	*6*		*1*			*3*
Macoupin	57,952	483	8.3	4			9	2	10
Madison	108,651	1,200	11.0	8	3	5	3	15	15
Alton	*25,418*	*284*	*11.2*	*3*	*1*			*2*	*2*
Granite City	*15,257*	*166*	*10.9*	*2*		*2*	*2*	*1*	*2*
Marion	37,745	409	10.8	5	1		2		7
Centralia	*12,781*	*270*	(2)		*1*				*1*
Marshall	[1]14,760	129	8.7	2				3	
Mason	[1]16,634	142	8.5	2					
Massac	[1]13,559	144	10.6	3		1	2		5
Menard	[1]11,694	100	8.6				1	4	
Mercer	[1]18,800	175	9.3	1			2		
Monroe	[1]12,839	66	5.1	3				1	1
Montgomery	42,031	469	11.2	4			5	1	1
Morgan	[1]33,567	575	17.1	1			4	2	2
Jacksonville	*15,753*	*448*	*28.4*	*1*			*2*		*1*
Moultrie	14,861	137	9.2				2		2
Ogle	[1]26,830	275	10.2					4	3
Peoria	112,890	1,496	13.3	7	1	1	1	14	11
Peoria	*77,065*	*1,033*	*13.4*	*5*	*1*			*5*	*4*
Perry	22,985	253	11.0	6			1		5
Piatt	[1]15,714	107	6.8					3	2
Pike	[1]26,866	245	9.1	1			1	1	
Pope	[1]9,625	97	10.1	3					
Pulaski	[1]14,629	174	11.9	4	5		1	1	
Putnam	7,581	62	8.2					1	1
Randolph	[1]29,109	255	8.8	7	1			1	8
Richland	[1]14,044	177	12.6	6		1		1	
Rock Island	94,553	968	10.2	5	1	1	1	1	8
Moline	*31,408*	*316*	*10.1*	*2*					*3*
Rock Island	*36,293*	*334*	*9.2*	*3*	*1*	*1*		*1*	*3*
St. Clair	138,232	1,424	10.3	10	5	1	3	4	25
Belleville	*25,205*	*273*	*10.8*		*1*				*4*
East St. Louis	*67,613*	*768*	*11.4*	*6*	*3*	*1*	*2*	*2*	*21*
Saline	39,193	381	9.7	7	3		24		5
Sangamon	101,214	1,240	12.3	7	1		8	14	4
Springfield	[1]*59,957*	*878*	*14.6*	*5*	*1*		*2*	*11*	
Schuyler	[1]13,285	132	99	1	1				1

Concluded.

Diseases of major sanitary importance.

Diphtheria.	Influenza.	Rabies (in man) Hydrophobia.	Pulmonary Tuberculosis.	Tuberculosis—other forms.	Chronic Bronchitis.	Cerebro Spinal Fever (Epidemic Cerebro Spinal Meningitis).	Acute Anterior Poliomyelitis (Infantile Paralysis).	Pneumonia—all forms.	Septic Sore Throat	Syphilis.	Gonococcus Infection.
	2		5	2	1			5			
2	1		17	2	2			19	1		
	4		3					4	1		
5	3		17	3			2	24	5	2	
4	*1*		*13*	*2*			*2*	*19*	*5*	*2*	
3	5		16	1	1			16	2		
1	*4*		*6*					*5*			
9	2		56	3	1		1	19	1	7	
5	13		66	9	12	2		65	14	2	1
	6		*27*	*4*	*5*			*27*	*3*	*2*	*1*
3	1		8	1	1			4	1		
1	1		9	3	1	2		13	3		
5	3		8	1	1			12	1	1	
11	5		18	4	1		1	19	1		
15	5		17	1	1			19			
2	6		11	3	1		1	28	2		
17	22		79	13	2	1	1	75	4	1	2
9	*9*		*23*	*7*	*2*			*51*	*2*	*1*	
14	14		43	9	3		2	35	3	1	1
23	*21*		*24*					*33*			
5	6		50	11	2	3	1	66	4	12	1
4	*3*		*42*	*9*	*1*	*1*	*1*	*52*	*3*	*10*	
1	1		5	1				7	1		
1,243	597	2	4,939	655	259	63	66	4,948	190	419	41

TABLE 8—REPORTED BIRTHS IN ILLINOIS, BY COUNTIES AND PRINCIPAL CITIES AND TOWNS, JULY 1, 1920-JUNE 30, 1921, INCLUSIVE.

Counties with important cities and towns.	Total July 1, 1920 to June 30, 1921 inclusive.	Counties with important cities and towns.	Total July 1, 1920 to June 30, 1921 inclusive.
The State	126,302	Knox	925
		Galesburg	*554*
Adams	1,075	LaSalle	1,711
Quincy	*660*	*LaSalle*	*338*
Alexander	418	*Ottawa	*148*
Cairo	*245*	*Streator*	*380*
Bond	283	Lake	1,356
Boone	261	*Waukegan*	*451*
Brown	159	Lawrence	518
Bureau	732	Lee	474
Calhoun	166	Livingston	724
Carroll	238	Logan	520
Cass	351	*Lincoln*	*192*
Champaign	1,128	McDonough	514
Champaign	*516*	McHenry	565
*Urbana	*88*	McLean	1,245
Christian	803	*Bloomington*	*441*
Clark	405	Macon	1,495
Clay	380	*Decatur*	*1,114*
Clinton	539	Macoupin	1,175
Coles	834	Madison	2,365
Mattoon	*366*	*Alton*	*641*
Cook	61,108	*Granite City*	*354*
*Berwyn	*97*	Marion	782
*Blue Island	*123*	*Centralia	*142*
Chicago	*54,998*	Marshall	279
Chicago Heights	*608*	Mason	278
Cicero	*535*	Massac	249
†Elgin (part)		Menard	257
Evanston	*980*	Mercer	374
*Forest Park	*46*	Monroe	186
*Maywood	*68*	Montgomery	781
Oak Park	*1,340*	Morgan	585
Crawford	383	*Jacksonville*	*240*
Cumberland	274	Moultrie	281
DeKalb	613	Ogle	455
DeWitt	465	Peoria	1,713
Douglas	391	*Peoria*	*1,284*
DuPage	387	Perry	497
Edgar	484	Piatt	344
Edwards	182	Pike	468
Effingham	358	Pope	109
Fayette	491	Pulaski	213
Ford	309	Putnam	150
Franklin	775	Randolph	614
Fulton	929	Richland	280
Canton	*275*	Rock Island	1,769
Gallatin	243	*Moline*	*816*
Greene	479	*Rock Island*	*496*
Grundy	327	St. Clair	2,661
Hamilton	247	*Belleville*	*477*
Hancock	482	*East St. Louis*	*1,400*
Hardin	160	Saline	528
Henderson	174	Sangamon	1,895
Henry	891	*Springfield*	*1,214*
*Kewanee	*173*	Schuyler	284
Iroquois	792	Scott	160
Jackson	775	Shelby	653
*Murphysboro	*108*	Stark	167
Jasper	297	Stephenson	710
Jefferson	526	*Freeport*	*448*
Jersey	276	Tazewell	807
JoDaviess	410	*Pekin	*123*
Johnson	138	Union	365
Kane	1,929	Vermilion	1,737
Aurora	*901*	*Danville*	*774*
‡Elgin (part)	*551*	Wabash	290
Kankakee	811	Warren	427
Kankakee	*569*	Washington	298
Kendall	179	Wayne	390

TABLE 8—Concluded.

Counties with important cities and towns.	Total July 1, 1920 to June 30, 1921 inclusive.	Counties with important cities and towns.	Total July 1, 1920 to June 30, 1921 inclusive.
White	380	Winnebago	1,910
Whiteside	746	*Rockford*	*1,605*
Will	1,706	Woodford	460
Joliet	*640*		
Williamson	1,420	Total all counties	126,302
**Herrin*	*148*		

† See Elgin, Kane County.
‡ Includes 1 birth occurring in that part of the city which is in Cook County.
* Not designated by the U. S. Bureau of the Census until 1921 to be shown separately; hence figures for last six months 1920 are not available.

TABLE 9—STATISTICS OF BIRTHS AND DEATHS FOR ILLINOIS, WITH RATES PER 1,000 POPULATION, THE YEARS OF 1916, 1917, 1918, 1919 AND 1920 COMPARED.

(Exclusive of stillbirths).

Area.	The State: total.					Chicago.					State exclusive of Chicago.				
Year.	Population, estimated *(revised) as of July 1, (mid-year).	Reported births.	Birth rate per 1,000 population.	Reported deaths.	Death rate per 1,000 population.	Population, estimated *(revised) as of July 1, (mid-year).	Reported births.	Birth rate per 1,000 population.	Reported deaths.	Death rate per 1,000 population.	Population, estimated *(revised) as of July 1, (mid-year).	Reported births.	Birth rate per 1,000 population.	Reported deaths.	Death rate per 1,000 population.
1920	6,528,886	120,360	18.4	82,132	12.6	2,728,302	50,303	18.4	34,841	12.8	3,800,584	70,057	18.4	47,291	12.4
1919	6,441,674	110,770	17.2	77,528	12.0	2,675,108	44,051	16.5	33,494	12.5	3,766,566	66,719	17.7	44,034	11.7
1918	6,354,462	117,055	18.4	103,138	16.2	2,621,914	49,707	19.0	44,605	17.0	3,732,548	67,348	18.0	58,533	15.7
1917	6,267,250	108,896	17.4	86,231	13.8	2,568,720	49,556	19.3	38,055	14.8	3,698,530	59,340	16.0	48,176	13.0
1916	6,180,038	114,298	18.5	81,345	13.2	2,515,526	47,769	19.0	36,304	14.4	3,664,512	66,529	18.2	45,041	12.3

* Revised estimates, based on the United States Censuses, April 15, 1910 and January 1, 1920.

TABLE 10—COMPARISON OF ANNUAL MORTALITY SUMMARIES, ILLINOIS, YEARS 1917, 1918, 1919 AND 1920.

Diseases.	Deaths occurring in—											
	1917			1918			1919			1920		
	State, Chicago not included.	City of Chicago.	Total.	State, Chicago not included.	City of Chicago.	Total.	State, Chicago not included.	City of Chicago.	Total.	State, Chicago not included.	City of Chicago.	Total.
Anthrax in man	0	0	0	0	0	0	1	1	2	0	4	4
Dengue	0	0	0	0	0	0	0	0	0	0	0	0
Diphtheria	497	1,228	1,725	432	720	1,152	428	592	1,020	492	630	1,122
Influenza	*	*	*	10,908	6,971	17,879	3,805	1,757	5,562	3,677	2,037	5,714
Leprosy	*	*	*	*	*	*	0	0	0	0	0	0
Malaria	105	3	108	77	0	77	94	8	102	81	3	84
Measles	523	243	766	278	63	341	101	197	298	392	89	481
Meningitis (epidemic cerebro spinal)	124	198	322	71	93	164	48	46	94	41	31	72
Pneumonia (all forms)	*	*	*	7,445	7,000	14,445	3,150	3,353	6,503	4,214	3,815	8,029
Poliomyelitis (acute infectious)	49	187	236	119	25	144	106	17	123	88	8	96
Rabies (in man)	1	2	3	2	0	2	3	1	4	0	1	1
Rabies (in animals)	‡0	‡0	‡0	‡0	‡0	‡0	‡0	‡0	‡0	‡0	‡0	‡0
Rocky Mountain Spotted (or tick) fever	0	0	0	0	0	0	0	0	0	0	0	0
Scarlet fever	168	623	791	106	48	154	100	118	218	176	181	357
Septic sore throat	28	34	62	71	4	75	127	15	142	173	17	190
Smallpox	8	2	10	10	4	14	5	0	5	15	1	16
†Tuberculosis (pulmonary)	3,823	3,291	7,114	4,343	3,276	7,619	3,584	2,795	6,379	3,473	2,275	5,748
Tuberculosis (all forms)	4,265	3,800	8,065	4,693	3,827	8,520	4,114	3,244	7,358	3,872	2,652	6,524
Typhoid fever	477	43	520	495	38	533	346	31	377	356	30	386
Typhus fever	0	0	0	0	0	0	0	0	0	0	0	0
Totals	6,245	6,363	12,608	24,707	18,793	43,500	12,428	9,380	21,808	13,577	9,499	23,076
Totals with Pneumonia and Influenza excluded	6,245	6,363	12,608	6,354	4,822	11,176	5,473	4,270	9,743	5,686	3,647	9,333

* Not included in this report. † Included in Tuberculosis (all forms). ‡ Not reported.

TABLE 10A—POPULATION, REPORTED BIRTHS WITH BIRTH RATES PER 1,000 POPULATION OF 22.3—BIRTH RATE FOR FEDERAL REGISTRATION AREA, YEAR OF 1919,) WITH DEATHS OF INFANTS UNDER 1 YEAR OF AGE, WITH DEATH RATES PER 1,000 WITH ESTIMATED INFANT MORTALITY RATES BASED ON PROBABLE NUMBER BIRTHS ACTUALLY REPORTED AND BIRTH RATES ESTIMATED FOR TOTAL POPULATION OR OVER. CALENDAR YEAR OF 1920.

Area.	1	2	3	4	5	6			
	Estimated (revised) population as of July 1, (mid-year).	Reported births.	Birth rate per 1,000 population.	Probable number of births based on rate of 22.3.	Probable deficiencies or excesses in reports.	Deaths of infants under 1 year of age (exclusive of stillbirths).			
						Less than 1 day.	Less than 1 week.	Less than 1 month.	1 month.
Adams County	62,188	1,116	17.9	1,387	—271	12	16	4	9
Quincy	*35,978*	*701*	*19.5*	*802*	*—101*	*9*	*14*	*4*	*7*
Alexander County	24,044	414	17.2	536	—122	9	8	5	3
Cairo	*15,237*	*233*	*15.3*	*340*	*—107*	*4*	*5*	*4*	
Bond County	16,045	273	17.0	358	—85	1	2	4	1
Boone County	15,322	247	16.1	342	—95	6	8	1	2
Brown County	9,336	169	18.1	208	—39	2	1	1	
Bureau County	42,648	772	18.1	951	—178	18	13	9	5
Calhoun County	8,245	188	22.8	184	+4	9	2	1	1
Carroll County	19,412	222	11.4	433	—211	4	4	7	1
Cass County	17,923	367	20.5	400	—33	6	5	7	3
Champaign County	57,223	1,134	19.8	1,276	—142	24	12	12	16
Champaign	*16,051*	*291*	*18.1*	*358*	*—67*	*7*	*4*	*2*	*4*
Urbana	*10,347*	(4)	(4)	(4)	(4)	*8*	*2*	*2*	*2*
Christian County	38,657	783	20.3	862	—79	14	9	7	3
Clark County	21,165	414	19.6	472	—58	9	4	2	
Clay County	17,684	372	21.0	394	—22	8	4	2	2
Clinton County	22,953	561	24.4	512	+49	6	3	8	3
Coles County	35,138	788	22.4	784	+4	18	12	12	4
Mattoon	*13,660*	*324*	*23.7*	*305*	*+19*	5	*4*	*4*	*3*
Cook County	3,086,379	56,227	18.2	68,826	—12,599	847	1,027	(5)	(5)
Chicago	*2,728,302*	*50,303*	*18.4*	*60,041*	*—10,538*	*764*	*926*	(5)	(5)
Chicago Heights	*19,917*	*473*	*23.7*	*444*	*+29*	*7*	*15*	*12*	*3*
Cicero	*46,663*	*621*	*13.3*	*1,038*	*—417*	*8*	*16*	*10*	*9*
Elgin	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)
Evanston	*37,865*	*960*	*25.4*	*844*	*+116*	*13*	*13*	*5*	*4*
Maywood	*22,280*	(4)	(4)	(4)	(4)			*2*	
Oak Park Village	*40,909*	*1,198*	*29.3*	*912*	*+286*	*23*	*16*	*8*	*8*
Blue Island	*11,598*	(4)	(4)	(4)	(4)	*2*	*4*	*3*	*5*
Berwyn	*14,578*	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Crawford County	22,771	400	17.6	508	—108	7	9	5	5
Cumberland County	12,858	286	22,2	287	—1	6	3	4	1
DeKalb County	31,339	627	20.0	699	—72	7	7	7	4
DeKalb	*7,871*	(4)	(4)	(4)	(4)	*2*	*2*	*6*	*1*
DeWitt	19,270	438	22.7	430	+8	6	4	10	1
Douglas County	19,611	422	21.5	437	—15	4	5	5	1
DuPage County	42,567	453	10.6	949	—496	7	8	8	2
Edgar County	25,769	501	19.4	575	—74	10	9	11	1
Edwards County	9,431	166	17.6	210	—44	3	2	3	
Effingham County	19,556	355	18.2	436	—81	6	7	5	1
Fayette County	26,187	498	19.0	584	—86	13	8	10	4
Ford County	16,466	331	20.1	367	—36	6	4	4	1
Franklin County	58,908	749	12.7	1,314	—565	26	25	21	17
Fulton County	48,163	909	18.9	1,074	—165	10	6	16	3
Canton	*10,952*	*229*	*20.9*	*244*	*—15*	*4*		*4*	*1*
Gallatin County	12,856	241	18.7	287	—46	3	1	4	
Greene County	22,910	484	21.1	510	—26	9	5	9	4
Grundy County	18,580	299	16.1	414	—115	6	4	4	2
Hamilton County	15,920	240	15.1	355	—115	3	3	3	1
Hancock County	28,523	467	16,4	636	—169	3	2	4	6
Hardin County	7,560	161	21.3	169	—8		1	1	
Henderson County	9,772	175	17.9	218	—43	4	3	3	2
Henry County	45,338	832	18.4	1,011	—179	24	7	7	3
Kewanee	*16,378*	(4)	(4)	(4)	(4)	*15*	*6*	*2*	*2*
Iroquois County	34,841	781	22.4	777	+4	15	10	4	8
Jackson County	37,191	814	21.9	829	—15	21	10	17	7
Murphysboro	*10,869*	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Jasper County	16,064	339	21.1	358	—19	5	3	2	2
Jefferson County	28,480	513	18.0	635	—122	7	5	12	3
Mt. Vernon	*9,909*	(4)	(4)	(4)	(4)	*5*	*2*	*4*	

TION; PROBABLE NUMBER OF BIRTHS ACTUALLY OCCURRING (BASED ON RATE CONSEQUENT PROBABLE DEFICIENCIES (OR PROBABLE HIGH BIRTH RATES.) ALSO REPORTED LIVE BIRTHS (RESULTANT INFANT MORTALITY RATES) TOGETHER OF BIRTHS OCCURRING. AND DIFFERENCE BETWEEN BIRTH RATES AS SHOWN BY CHILDREN PROBABLY BORN IN ILLINOIS. BY COUNTIES, AND CITIES OF 10,000

6					7	8	9
Deaths of infants under 1 year of age (exclusive of stillbirths).					Death of infants under 1 year of age per 1,000 reported live births (resultant infant mortality rate).	Estimated infant mortality rate (based on probable number of births occurring).	Difference between resultant and estimated infant mortality rates.
2 months.	3-5 months.	6-8 months.	9-11 months.	Total deaths under 1 year of age.			
6	9	6	8	70	62.7	50.5	12.2
3	4	5	3	49	69.9	61.1	8.8
6	9	4	8	52	125.6	97.0	28.6
2	5	1	4	25	107.3	73.5	[1]33.8
3		2	3	16	58.6	44.7	13.9
2	2	1	2	24	97.2	70.2	27.0
	2	1	2	9	53.3	43.3	10.0
3	8	5	5	66	85.5	69.4	16.1
	2		3	18	[8]95.7	(9)	(9)
1	4	1	2	24	108.1	55.4	52.7
1	2	4	2	30	81.7	75.0	6.7
4	14	9	5	96	84.7	75.2	9.5
1	7	3	4	32	110.0	89.4	[1]20.6
	1	1		16	(4)	(4)	(4)
2	8	8	6	57	72.8	66.1	6.7
1	4	1	3	24	58.0	50.8	7.2
3	1	5	2	27	72.6	68.5	4.1
3	11	4	5	43	[8]76.6	(9)	(9)
1	8	6	4	65	[8]82.5	(9)	(9)
	2	2	3	23	[8]71.0	(9)	(9)
(5)	(B) 2,807	(7)	(D) 1,484	6,205	110.4	90.2	20.2
(5)	(B) 2,607	(7)	(D) 1,378	5,674	112.8	93.3	[1]19.5
9	6	10	5	67	[8]141.6		
4	10	8	10	75	120.8	72.3	[1]48.5
(5)	(5)	(5)	(5)	(5)	(5)	(5)	(5)
2	12	9	3	61	[8]63.6	(9)	
			2	6	(4)	(4)	
1	3	4	2	65	[8]54.3	(9)	
3	3		3	23	(4)	(4)	
(4)	(4)	(4)	(4)	(4)	(4)	(4)	
1		5	1	33	82.5	65.0	17.5
2	1	2	1	20	69.9	69.7	0.2
1	2		3	31	49.4	44.3	5.1
1			2	14	(4)	(4)	(4)
2	5	3	3	34	[8]77.6	(9)	(9)
	6	5	1	27	64.0	61.8	2.2
2	6	4	2	39	86.1	41.1	45.0
	2	1	3	37	73.9	64.3	9.6
	3	5	1	17	102.4	81.0	21.4
4	1	4	4	32	90.1	73.4	16.7
3	7	7	3	55	110.4	94.2	16.2
	3	3	4	25	108.2	68.1	40.1
13	29	19	23	173	231.0	131.6	99.4
1	14	5	10	65	71.5	60.5	11.0
	5		3	17	74.2	69.7	4.5
2		3	6	19	78.8	66.2	12.6
2	1	4	1	35	72.3	68.6	3.7
2	6	2	2	28	93.6	67.6	26.0
3	2	3	2	20	83.3	56.3	27.0
1	5	3	5	29	62.1	45.6	16.5
1	2	1		6	37.3	35.5	1.8
1	2	1	3	19	108.6	87.2	21.4
6	7	4	6	64	76.9	63.3	13.6
2	3	3	2	35	(4)	(4)	(4)
1	3	4	1	46	[8]58.9	(9)	(9)
3	16	10	4	88	108.1	106.2	1.9
(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
	2		1	15	44.2	41.9	2.3
2	9	12	10	60	117.0	94.5	22.5
	4	5	4	24	(4)	(4)	(4)

TABLE 10A

Area.	1	2	3	4	5	6			
	Estimated (revised) population as of July 1, (mid-year).	Reported births.	Birth rate per 1,000 population.	Probable number of births based on rate of 22.3.	Probable deficiencies or excesses in reports.	Deaths of infants under 1 year of age (exclusive of stillbirths).			
						Less than 1 day.	Less than 1 week.	Less than 1 month.	1 month.
Jersey County	12,682	274	21.6	283	—9	7	3	2	
JoDaviess County	21,917	385	17.6	489	—104	12	4	5	6
Johnson County	12,022	119	9.9	268	—149		1	1	1
Kane County	99,892	1,779	17.8	2,228	—449	25	31	18	8
Aurora	*36,736*	*827*	*22.5*	*819*	*+8*	*10*	*14*	*6*	*1*
Elgin	*27,538*	*478*	*17.1*	*614*	*—148*	*7*	*11*	*7*	*1*
Kankakee County	45,156	774	17.1	1,007	—233	12	7	12	5
Kankakee	*16,896*	*347*	*20.5*	*377*	*—30*	*6*	*4*	*6*	
Kendall County	10,074	179	17.8	225	—46	3	2	2	
Knox County	46,756	839	17.9	1,043	—204	10	20	7	8
Galesburg	*23,924*	*503*	*21.0*	*534*	*—31*	*6*	*12*	*7*	*7*
Lake County	75,275	1,269	16.9	1,679	—410	17	16	25	5
Waukegan	*19,389*	*399*	*20.6*	*433*	*—33*	*6*	*6*	*8*	*2*
LaSalle County	93,069	1,690	18.2	2,075	—385	28	28	27	10
LaSalle	*13,128*	*351*	*26.7*	*293*	*+58*	*5*	*9*	*8*	*1*
Ottawa	*10,832*	(4)	(4)	(4)	(4)	1	1	3	1
Streator	*14,806*	*345*	*23.3*	*330*	*+15*	*5*	*3*	*4*	*3*
Lawrence County	21,380	424	19.8	477	—53	10	3	3	5
Lee County	28,017	447	16.0	625	—178	9	5	7	4
Livingston County	39,070	793	20.3	271	—78	4	15	3	3
Logan County	29,562	511	17.3	659	—148	9	8	5	4
Lincoln	*11,933*	*193*	*16.2*	*266*	*—73*	*4*	*6*	*2*	*3*
Macon County	65,741	1,459	22.2	1,466	—7	20	19	6	9
Decatur	*44,471*	*1,089*	*24.5*	*992*	*+97*	*16*	*14*	*4*	*6*
Macoupin County	57,613	1,241	21.5	1,285	—44	15	12	16	5
Madison County	107,773	2,239	20.8	2,403	—164	46	35	25	19
Alton	*35,050*	*583*	*23.3*	*559*	*+24*	*11*	*3*	*5*	*5*
Granite City	*15,007*	*295*	*19.7*	*335*	*—40*	*3*	*7*	*4*	*3*
Marion County	37,621	797	21.2	839	—42	16	11	11	9
Centralia	*12,636*	(4)	(4)	(4)	(4)	*8*	*5*	*2*	*3*
Marshall County	14,760	264	17.9	329	—65	7	4	6	
Mason County	16,634	299	18.0	371	—72	3		2	1
Massac County	13,559	256	18.9	302	—46	3	1	6	3
McDonough County	27,084	523	19.3	604	—81	11	8	4	6
McHenry County	33,198	527	15.9	740	—213	7	5	4	5
McLean County	70,215	1,261	18.0	1,566	—305	27	13	10	5
Bloomington	*28,877*	*448*	*15.5*	*644*	*—196*	*12*	*5*	*4*	*1*
Menard County	11,694	240	20.5	261	—21	4	4	1	1
Mercer County	18,800	344	18.3	419	—75	5	4	3	2
Monroe County	12,839	202	15.7	286	—84	4	3	1	2
Montgomery County	41,717	776	18.6	930	—154	13	11	4	7
Morgan County	33,567	595	17.7	749	—154	11	9	13	4
Jacksonville	*15,733*	*266*	*16.9*	*351*	*—85*	*4*	*6*	*7*	*1*
Moultrie County	14,850	295	19.9	331	—36	7	1	4	1
Ogle County	26,830	465	17.3	598	—133	9	10	1	3
Peoria County	112,300	1,629	14.5	2,504	—875	26	27	30	7
Peoria	*76,593*	*1,209*	*15.8*	*1,708*	*—499*	*22*	*23*	*26*	*7*
Perry County	22,943	492	21.4	512	—20	11	8	8	6
Piatt County	15,714	341	21.7	350	—9	8	3	3	
Pike County	26,866	456	17.0	599	—143	5	6	9	3
Pope County	9,625	90	9.4	215	—125	1	1	1	
Pulaski County	14,629	228	15.6	333	—105	9	6	8	1
Putnam County	7,580	152	20.1	169	—17	1	2		
Randolph County	29,109	599	20.6	649	—50	14	4	4	1
Richland County	14,044	295	21.0	313	—18	5	2	3	
Rock Island County	93,425	1,763	18.9	2,083	—320	30	21	23	13
Moline	*31,071*	*834*	*26.8*	*693*	*+141*	*6*	*14*		*3*
Rock Island	*35,736*	*481*	*13.5*	*797*	*—316*	*13*	*4*	*18*	*5*
Saline County	38,773	552	14.2	865	—313	13	11	10	11
Sangamon County	100,738	1,897	18.8	2,246	—349	31	34	30	11
Springfield	*59,570*	*1,165*	*19.6*	*1,328*	*—163*	*21*	*22*	*21*	*6*
Schuyler County	13,285	291	21.9	296	—5	6	4	2	1
Scott County	9,489	132	13.9	212	—80	5	2	6	1
Shelby County	29,601	632	21.4	660	—28	11	6	7	4
Stark County	9,693	166	17.1	216	—50	1	1	1	

—Continued.

6					7	8	9
Deaths of infants under 1 year of age (exclusive of stillbirths).					Deaths of infants under 1 year of age per 1,000 reported live births (resultant infant mortality rate).	Estimated infant mortality rate (based on probable number of births occurring).	Difference between resultant and estimated infant mortality rates.
2 months.	3-5 months.	6-8 months.	9-11 months.	Total deaths under 1 year of age.			
----	----	2	3	17	62.0	60.1	1.9
2	2	5	3	39	101.3	79.8	21.5
1	2	3	----	9	75.6	33.6	42.0
6	20	11	9	128	72.0	57.5	14.5
4	*12*	*5*	*6*	*58*	[3]*70.1*	(9)	(9)
2	*2*	*3*	*3*	*36*	*76.3*	*58.6*	[1]*17.7*
1	7	3	7	54	69.8	53.6	16.2
----	*3*	*2*	*4*	*25*	*72.0*	*66.3*	*5.7*
----	----	1	1	9	50.3	40.0	10.3
3	7	5	5	65	77.5	62.3	15.2
2	*4*	*4*	*4*	*46*	*91.5*	*86.1*	*5.4*
2	28	9	14	116	91.4	69.1	22.3
2	*4*	*4*	*9*	*51*	*127.8*	*118.1*	*9.7*
8	23	19	10	153	90.5	73 7	16.8
2	*7*	*2*	*1*	*55*	[3]*99.7*	(9)	(9)
----	*1*	*2*	----	*9*	(4)	(4)	(4)
3	*9*	*6*	*3*	*55*	[3]*101.4*	(9)	(9)
3	6	3	3	36	84.9	75.5	9.4
2	5	4	2	38	85.1	60.8	25.1
6	8	4	1	44	55.5	50.5	5.0
2	4	4	4	40	78.3	60.1	17.6
1	*2*	*2*	*3*	*23*	*119.2*	*86.5*	[1]*32.7*
4	18	9	4	89	61.0	60.7	00.3
4	*15*	*8*	*4*	*71*	[3]*85.2*	(9)	(9)
11	15	9	9	92	74.1	71.6	2.5
9	36	29	15	214	95.6	89.1	6.5
1	*11*	*6*	*5*	*47*	[2]*80.6*	(9)	(9)
1	*7*	*5*	*1*	*36*	*122.0*	*107.5*	[1]*14.5*
6	16	8	4	81	101.6	96.5	5.1
2	*3*	*1*	*2*	*26*	(4)	(4)	(4)
----	2	1	----	20	75.8	60.8	15.0
1	2	1	3	13	43.5	35.0	8.5
4	7	3	2	29	113.3	96.0	17.3
----	2	3	1	35	66.9	57.9	9.0
5	10	3	8	47	89.2	63.5	25.7
4	12	5	7	83	65.8	53.0	12.8
2	*8*	*1*	*3*	*56*	*80.4*	*55.9*	[1]*24.5*
----	----	1	----	11	45.8	42.1	3.7
----	2	----	4	20	58.1	47.7	10.4
----	----	2	----	12	59.4	42.0	17.4
4	7	7	7	60	77.3	64.5	12.8
1	5	6	5	54	90.8	72.1	18.7
----	*4*	*3*	*4*	*29*	*109.0*	*82.6*	[1]*26.4*
4	1	5	1	24	81.4	72.5	8.9
4	5	----	3	35	75.3	58.5	16.8
10	29	24	9	162	99.4	64.7	34.7
6	*24*	*18*	*8*	*154*	*110.8*	*78.5*	[1]*32.3*
4	8	6	5	56	113.8	109.4	4.4
2	3	1	1	21	61.6	60.0	1.6
1	6	2	5	37	81.1	61.8	19.3
1	4	1	1	10	111.1	46.5	64.6
2	7	5	3	41	179.8	123.1	56.7
----	1	1	1	6	39.5	35.5	4.0
3	4	2	4	36	60.1	55.5	4.6
1	1	2	3	17	57.6	54.3	3.3
11	17	13	12	140	79.4	67.2	12.2
3	*6*	*2*	*3*	*57*	[3]*44.4*	(9)	(9)
5	*7*	*6*	*4*	*62*	*125.5*	*77.8*	[1]*50.7*
1	7	12	13	78	141.3	90.2	51.1
13	21	19	8	167	88.0	74.4	13.6
7	*13*	*13*	*6*	*108*	*92.7*	*81.3*	[1]*11.4*
----	3	2	2	20	68.7	67.6	1.1
----	1	2	1	18	136.4	84.9	51.5
4	5	6	3	46	72.8	69.7	3.1
1	1	1	----	6	36.1	27.8	8.3

TABLE 10A

Area.	1	2	3	4	5	6			
	Estimated (revised) population as of July 1, (mid-year).	Reported births.	Birth rate per 1,000 population.	Probable number of births based on rate of 22.3.	Probable deficiencies or excesses in reports.	Deaths of infants under 1 year of age (exclusive of stillbirths).			
						Less than 1 day.	Less than 1 week.	Less than 1 month.	1 month
St. Clair County	137,376	2,568	18.7	3,063	—495	33	45	27	26
Belleville	*25,014*	*479*	*19.1*	*558*	*—79*	*6*	*11*	-------	*6*
E. St. Louis	*67,190*	*1,374*	*20.4*	*1,498*	*—124*	*23*	*23*	*18*	*11*
Stephenson County	37,790	674	17.8	843	—169	12	6	5	4
Freeport	*19,829*	*427*	*21.5*	*442*	*—15*	*6*	*5*	*3*	*4*
Tazewell County	38,772	777	20.0	865	—88	13	15	8	2
Pekin	*12,199*	(4)	(4)	(4)	(4)	*5*	*7*	*3*	*1*
Union County	20,249	414	20.0	452	—38	7	9	4	3
Vermilion County	86,583	1,684	19.4	1,931	—247	38	25	18	3
Danville	*34,080*	*771*	*22.6*	*760*	*+11*	*20*	*17*	*8*	*3*
Wabash County	14,034	309	22.0	313	—4	8	5	3	1
Warren County	21,488	394	18.3	479	—85	6	5	5	2
Monmouth	*8,116*	(4)	(4)	(4)	(4)	*4*	*2*	*2*	-------
Washington County	18,035	329	18.2	402	—73	3	5	5	1
Wayne County	22,772	360	15.8	508	—148	7	2	9	6
White County	20,081	384	19.1	448	—64	7	3	6	4
Whiteside County	36,260	712	19.6	809	—97	15	14	12	8
Will County	93,351	1,632	17.5	2,082	—450	28	35	25	14
Joliet	*38,636*	*568*	*14.7*	*862*	*—294*	*13*	*16*	*15*	*8*
Williamson County	61,916	1,307	21.1	1,381	—74	34	18	18	11
Herrin	*11,198*	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Winnebago County	92,360	1,821	19.7	2,060	—239	25	28	19	10
Rockford	*66,694*	*1,518*	*22.8*	*1,487*	*+31*	*24*	*23*	*15*	*10*
Woodford County	19,340	486	25.1	341	+55	3	5	17	1
Total State	6,528,886	120,360	18.4	145,594	—25,234	1,974	1,932	(6)	(6)
Down State	3,800,584	70,057	18.4	84,753	—14,696	1,210	1,007	890	479
Chicago City	*2,728,302*	*50,303*	*18.4*	*60,841*	*—10,538*	*764*	*925*	(6)	(6)

[1] Birth rate U. S. Bureau of the Census Registration Area, 1919.
[2] Derived from columns 4 and 6.
[3] Minus signs show deficiencies. Plus signs show excesses (columns 2 and 4 compared).
[4] Not available. Reported births included in county total.
[5] See Elgin, Kane County.
[6] Not available for all cities in Cook County for these age groups. Deaths for these age groups included in total at (B).
[7] Not available for all cities in Cook County for this age group. Deaths for this age included in total at (D).
[8] Probably true rate.
[9] See column 7.

—Concluded.

6					7	8	9
Deaths of infants under 1 year of age (exclusive of stillbirths).					Deaths of infants under 1 year of age per 1,000 reported live births (resultant infant mortality rate).	Estimated infant mortality rate (based on probable number of births occurring).	Difference between resultant and estimated infant mortality rates.
2 months.	3-5 months.	6-8 months.	9-11 months.	Total deaths under 1 year of age.			
16	39	33	23	242	94.2	79.0	14.8
1	*2*	*2*	*3*	*31*	*64.7*	*55.6*	*9.1*
10	*27*	*27*	*18*	*157*	*114.3*	*104.8*	*9.5*
1	10	7	3	48	71.2	56.9	14.3
1	*8*	*4*	*2*	*33*	*77.3*	*74.7*	*2.6*
3	7	1	6	55	70.8	63.6	7.2
2	*3*	*1*	*1*	*23*	(4)	(4)	(4)
1	6	1	3	34	82.1	75.2	6.9
9	18	16	25	157	93.2	81.3	11.9
2	*4*	*9*	7	*70*	[8]*90.8*	(9)	(9)
3	8	2	1	31	100.2	99.0	1.2
4	3	----------	1	26	66.0	54.3	11.7
1	2	----------	1	12	(4)	(4)	(4)
1	7	2	1	25	76.0	62.2	13.8
1	6	3	6	40	111.1	78.7	32.4
2	9	5	5	41	106.8	91.5	15.3
2	11	10	7	79	111.0	97.7	13.3
8	22	15	12	159	97.4	76.4	21.0
5	10	8	6	81	142.6	94.0	48.6
7	19	19	15	141	107.9	102.1	5.8
(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
15	23	9	11	140	76.9	68.0	8.9
12	*17*	7	*11*	*119*	[8]*78.4*	(9)	(9)
----------	----------	1	2	29	[8]59.7	(9)	(9)
(6)	(B) 5,186	(7)	(D) 2,526	11,618	96.5	79.8	16.7
353	857	616	532	5,944	84.8	70.1	14.7
(6)	(B) *2,607*	(7)	(D) *1,378*	*5,674*	*112.8*	*93.3*	*19.5*

TABLE 11—PROBABLE DEGREE OF COMPLETENESS OF BIRTH AND DEATH REGISTRATION IN ILLINOIS, CALENDAR YEARS OF 1919 AND 1920 BASED ON BIRTH RATE OF 22.3 (RATE REPORTED FOR FEDERAL REGISTRATION AREA FOR BIRTHS, BUREAU OF THE CENSUS, 5TH ANNUAL REPORT 1919) AND DEATH RATE OF 12.9 (RATE REPORTED FOR FEDERAL REGISTRATION AREA FOR DEATHS, BUREAU OF THE CENSUS MORTALITY STATISTICS, 1919).

Area.	1919				Area.	1920			
	Population estimated (revised) mid-year (July 1).	Probable number.	Actually reported.	Probable degree of completeness.		Population estimated (revised) mid-year (July 1).	Probable number.	Actually reported.	Probable degree of completeness.
The State	6,441,674	Births 143,649	110,770	.77	The State	6,528,886	Births 145,594	120,360	.83
		Deaths 83,096	77,528	.93			Deaths 84,223	82,132	.98
Chicago	2,675,108	Births 59,655	44,051	.73	Chicago	2,728,302	Births 60,841	50,303	.83
		Deaths 34,509	33,494	.97			Deaths 35,195	34,841	.99
State exclusive of Chicago	3,766,566	Births 83,994	66,719	.79	State exclusive of Chicago	3,800,584	Births 84,753	70,057	.83
		Deaths 48,589	44,034	.91			Deaths 49,028	47,291	.96

TABLE 12—PROBABLE DEFICIENCIES IN THE NUMBER OF BIRTHS REPORTED FOR THE YEARS OF 1919 AND 1920, FROM THE STATE, CITY OF CHICAGO AND STATE EXCLUSIVE OF CHICAGO.

Area.	1919	Births—1919.				Area.	1920	Births—1920.			
	Estimated (revised) population mid-year (July 1).	Actually reported.	Rate per 1,000.	Based on birth rate of 22.3 per 1,000 population. (Federal Registration Area Bureau of the Census Birth Statistics, 5th Annual Report, 1919).			Estimated (revised population mid-year (July 1).	Actually reported.	Rate per 1,000.	Based on birth rate of 22.3 per 1,000 population. (Federal Registration Area Bureau of the Census Birth Statistics, 5th Annual Report, 1919).	
				Probable number.	Deficiency in number reported.					Probable number.	Deficiency in number reported.
State	6,441,674	110,770	17.2	143,649	32,879	State	6,528,886	120,360	18.4	145,594	25,234
Chicago	2,675,108	44,051	16.5	59,655	15,604	Chicago	2,728,302	50,303	18.4	60,841	10,538
State exclusive of Chicago	3,766,566	66,719	17.7	83,994	17,275	State exclusive of Chicago	3,800,584	70,057	18.4	84,753	14,696

DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING.

C. W. EAST, M. D., *Chief.*

It should be noted that the Division of Child Hygiene and Public Health Nursing has not had its full personnel. The position of supervising nurse has been vacant during the entire year. We have had but two public health nurses.

CLINICAL SERVICE.

The care of our reconstruction clinics has increased by reason of demands for new clinics and the larger number of patients attending them.

Clinics have been added at Jacksonville and Mattoon, and occasional service has been given at Carlinville. Litchfield and Kewanee have applied for the establishment of clinics. There are now twenty-five clinics on the list of the division. The accompanying table presents in detail the work done during the year. (See Table No. 13.)

It will be seen that several new features appear when compared to previous years. Over twenty-seven hundred patients were cared for, as compared to about fifteen hundred the previous year.

The St. John's Sanitarium, near Riverton, Sangamon County, opened a crippled children's unit in April, 1921, especially for those who need operative and institutional care. In it there are accommodations for forty patients. There has been an average of thirty patients since the opening of this institution. The sanitarium cares for these patients at a per capita cost of $8 per week. The chief of the Division of Child Hygiene and Public Health Nursing is physician and surgeon in charge, and the cooperative plan begun and developed in our field clinics is continued. The Sangamon County Board of Supervisors and the Bissell school district, in which the institution is located, have opened a public school at the sanitarium where the crippled children have advantages which many of them could not have at home.

Reference to the chart will show that other problems are being met through the twenty-five clinics, besides those of the crippled. An important percentage of the patients present nutritional faults. Others show pathological conditions of wide distribution, not excluding psychopathic and nervous abnormalities. In fact, we believe that these clinics are among the best possible agencies to introduce the entire range of public health interests to the communities of the State. Public health interests helped by them may be enumerated as follows:

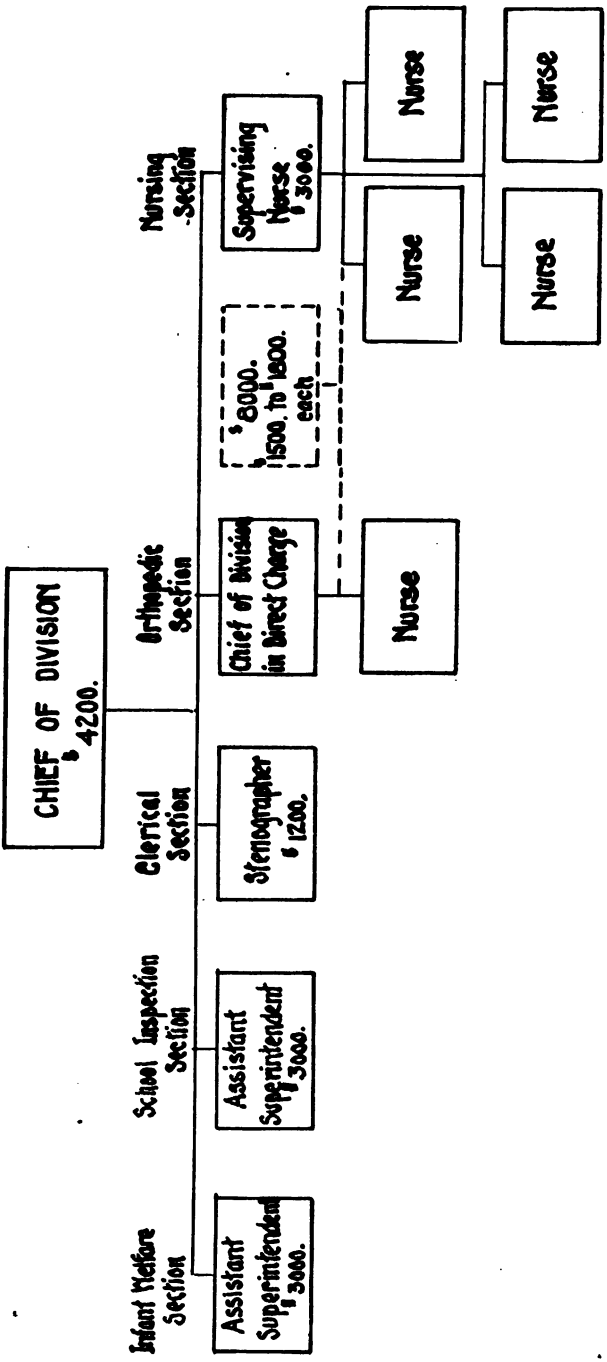

Figure XXI—Divisional Organization for Biennium, 1921-23.

1. They meet adequately the needs of the crippled, especially among the indigent.
2. They furnish help to physicians who cannot take their crippled patients to the centers for orthopedic consultation.
3. They stimulate public health nursing.
4. They broaden the vision and functions of local public health administration.
5. They employ extra-governmental agencies interested in public health in a mutually helpful way.
6. They afford opportunity for observation, advice, assistance and unobtrusive but effective supervision of local public health agencies.
7. They pave the way for public school nursing and medical inspection.
8. They make a point of contact with the public which accrues to the benefit of public health in all its agencies.
9. They assist in numerous cases to call favorable attention and support to other public health efforts such as anti-tuberculosis and social hygiene.
10. They are a standing advertisement of the State Department of Public Health and have widely commended it to favor.

This enumeration is not complete and is not made as an apology, which is needed in no sense, and to no extent, but as correctly a report of one of the principal activities of the division.

EDUCATIONAL SERVICE.

No small amount of service has been rendered public health propaganda by the division. All members have taken part in numerous better babies conferences, including that of the State Fair. The activities of the division in this respect have reached from Lake to Jackson Counties, and from Danville to Aledo and Carthage. The nurses have visited numerous communities for conference and advice with local nursing agencies.

In various instances a member of the nursing staff of the division has inducted a new nurse into her duties. This has been especially true in school nursing, the forces of which are recruited largely from private duty ranks.

The division has been responsible for numerous articles in the department publications and the production of several important pamphlets.

Addresses and lectures have been given in every part of the State during the year to groups representing a wide range of professional and civic constituency.

The correspondence of the division is considerable and important. Recognition has come in the way of inquiries and requests for service from every part of the State. The Children's Bureau of the United States Department of Labor has frequently shown interest in plans of the division, and has specifically commended its work.

The relationship of the division to the central division of the American Red Cross, the Chicago Health Department, the Cook County Bureau of Social Service, the Chicago Visiting Nurses Association, the Illinois Tuberculosis Association and the King's Daughters has been cordial, and with the most of these more than casual.

The Shriners, the International Rotary Association, various local units of the Traveling Men's Protective Association and the Union Commercial Traveler's Association have manifested deep and helpful interest.

The division is reaching the public widely and effectively. As this report is closed it has become evident that the legislature has provided adequately for desired increases in personnel and its compensation. This but meets demands which the service has created. The organization chart, which is included in this report, presents graphically the service which the division is now prepared to render. This organization will become effective July 1, 1921.

We record our gratitude and our purpose to enlarge and enhance our service to the State correspondingly.

TABLE 13.

	Number cases in attendance.	Number old cases.	Number new cases.	Number infantile paralysis.	Number tuberculosis	Number malnutrition.	Number spastic paralysis.	Other orthopedic conditions.	Special and assisted training.	Number given advice as to shoes, braces, casts or other appliances.	Referred to family physician.	Wassermann test.	Number X-ray.	Number operations advised.	Number operated by us.	Number operated by others.	Advised hospital or institutional care.
Alton	208	157	51	9	6	22	3	35	29	36	9	7	4	18	1	3	4
Aurora	51	34	17	7	1	3	1	6	14	18	1	----	3	1	----	1	1
Blue Island	38	10	28	9	----	5	----	10	7	13	----	1	2	5	1	----	3
Carlinville	9	----	9	4	1	----	----	4	4	3	----	----	3	4	----	----	3
Champaign	86	25	61	19	6	11	3	53	23	59	8	5	6	13	----	----	7
Cicero	65	38	27	19	1	2	3	12	18	30	2	----	2	5	----	----	2
Danville	196	126	70	48	8	10	5	44	33	82	13	----	11	15	----	----	7
Elgin	79	40	39	9	4	5	2	21	24	22	4	2	3	1	----	----	4
East St. Louis	61	25	36	26	----	5	3	18	14	30	5	1	1	7	----	1	6
Freeport	135	81	54	20	3	7	----	41	24	58	6	3	5	10	----	----	2
Galesburg	131	55	76	26	1	12	3	44	45	52	5	1	6	25	----	3	4
Jacksonville	23	12	11	5	----	----	----	6	3	5	----	----	1	2	----	----	3
Joliet	132	80	52	17	4	7	4	27	22	54	8	6	6	6	----	2	2
Kankakee	86	54	32	13	3	3	2	22	10	38	3	1	4	4	----	2	2
Moline	73	47	26	9	3	3	1	15	20	29	1	2	2	9	----	----	6
Mt. Olive	6	----	6	3	----	----	----	3	1	2	1	----	----	1	----	----	----
Monticello	39	30	9	1	----	1	1	6	11	6	3	----	1	1	----	----	1
Mattoon	117	45	72	30	5	9	8	35	28	57	10	2	9	13	----	1	10
Ottawa	64	43	21	25	----	5	1	12	8	34	1	1	3	3	----	----	2
Princeton	146	78	68	20	7	5	1	36	39	46	10	3	8	11	----	----	11
Quincy	78	37	41	14	3	8	1	21	12	32	8	1	6	3	----	----	6
Rockford	39	18	21	13	1	8	----	8	9	16	----	3	----	----	----	----	4
Rock Island	51	39	12	9	----	4	----	7	11	14	1	----	1	4	----	----	3
Streator	98	68	30	9	2	7	1	15	16	29	4	----	3	3	----	1	2
Waukegan	43	34	9	12	1	2	----	5	10	25	----	----	1	1	----	----	3
Springfield	689	521	168	75	35	26	5	71	53	199	12	8	31	20	8	5	40
Total	2,743	1,697	1,046	451	95	170	48	577	488	999	115	47	122	185	10	19	138

DIVISION OF DIAGNOSTIC, BIOLOGICAL AND RESEARCH LABORATORIES.

THOMAS G. HULL, Ph. D., *Chief.*

According to the appropriation made by the Fifty-first General Assembly, the laboratories of the department were divided into two distinct divisions, the Diagnostic Laboratories and the Biological and Research Laboratories. For convenience, however, the personnel of both these divisions has been merged into a unit under the general supervision of one chief, as will be seen in the accompanying chart. The Fifty-second General Assembly made provisions for one chief for the two sections of the division.

The principal function of the laboratories during the past year has been the examination of specimens for diagnosis of the communicable diseases. It has been found impracticable to manufacture biological products, so the money appropriated for this purpose was used for the purchase of these products. The rabies fund was used for services of physicians to administer rabies vaccine and did not entail any burden on the laboratory personnel. The clerical and supply sections have acted in the capacity of "service units" for the diagnostic and biological sections, in preparing reports, keeping records and filling requests for material.

LAWS UNDER WHICH THE LABORATORIES OPERATE.

Following are abstracts of the laws, passed by the General Assemblies of the State, which affect the laboratories:

An Act to create and establish a Board of Health in the State of Illinois. Approved May 28, in force July 1, 1877. Laws 1877, p. 207. Amended by act filed May 18, in force July 1, 1907. Laws, 1907, p. 537:

> The State Board of Health may establish and maintain a chemical and bacteriologic laboratory for the examination of public water supplies, and for the diagnosis of diphtheria, typhoid fever, tuberculosis, malarial fever and such other diseases as they may deem necessary for the protection of the public health.

An act to provide for the treatment and care of poor persons afflicted with the disease called rabies. Approved May 12, in force July 1, 1905. Laws 1905, p. 38:

> The overseers of the poor or other officers having charge of the dispensation of public charity in the several counties of this State may hereafter send to an institution within the State of Illinois for the preventitive treatment of hydrophobia, such institution to be selected by the State Board of Health, all poor persons duly certified by regular physicians to have been bitten by rabid animals or otherwise put in danger of infection with rabies.

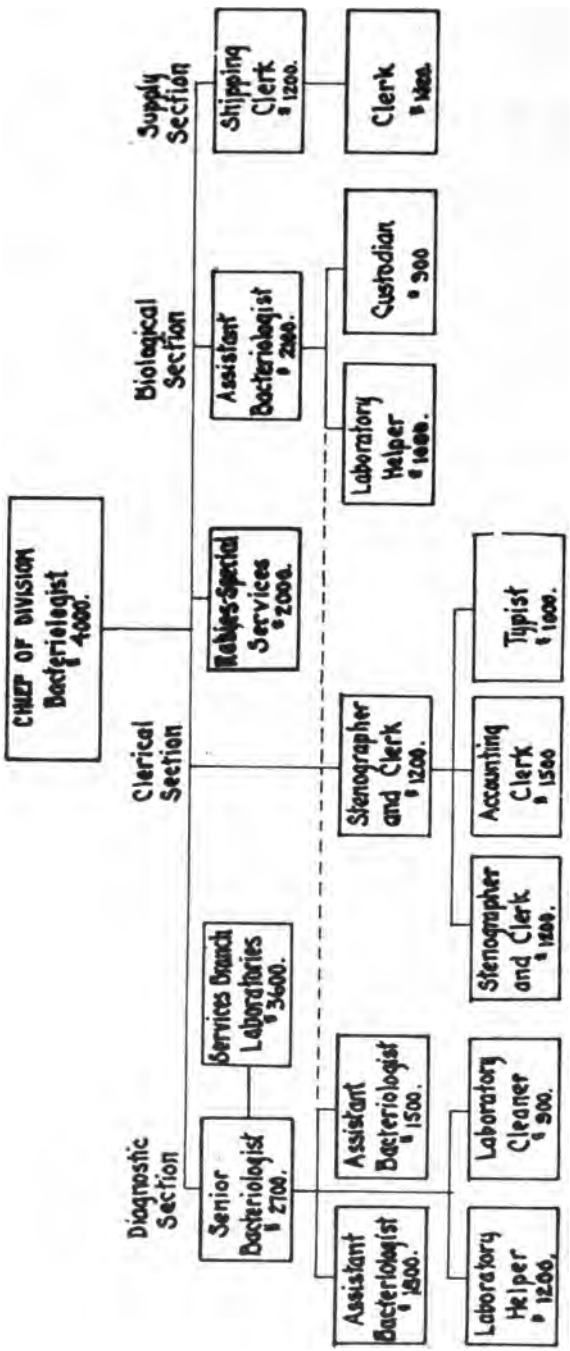

Figure XXII—Divisional Organization for Biennium, 1921-23.

The charges for the services of said institution shall be paid by the State of Illinois at a rate not exceeding one hundred dollars a patient, and there is hereby appropriated the sum of two thousand dollars, or as much thereof as may be necessary to expend, for the purpose of this act.

The Civil Administrative Code (sec. 55, p. 29) gives the Department of Public Health the following powers:

To maintain chemical, bacteriological and biological laboratories, to make examinations of milk, water, sewage, wastes, and other substances, and to make such diagnoses of diseases as may be deemed necessary for the protection of the people of the State;

To purchase and distribute free of charge to citizens of the State diphtheria antitoxin, typhoid vaccine, smallpox vaccine and other sera, vaccines and prophylactics such as are of recognized efficiency in the prevention and treatment of communicable diseases;

To make investigations and inquiries with respect to the causes of disease, especially epidemics, and to investigate the causes of mortality and the effect of localities, and other conditions upon the public health, and to make such other sanitary investigations as it may deem necessary for the preservation and improvement of the public health.

DIAGNOSTIC SECTION.

The main laboratories at Springfield made 52,008 examinations during the past year, an increase over the previous year of 65 per cent. It has been necessary to confine the procedures performed quite rigidly to problems with a public health aspect. Tissues sectioning and urine analysis as routine measures have been eliminated. All communicable diseases, however, for which there is a laboratory test have received particular attention. In some instances, as meningitis, very little could be accomplished from a distance, and in the isolated occasions which arose, the emergency did not warrant sending a field laboratory to the spot.

TABLE 14—EXAMINATIONS MADE AT CENTRAL DIAGNOSTIC LABORATORY FOR FISCAL YEAR 1920-1921.

	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	Total.
Wassermann (blood)	1,457	1,606	1,466	1,601	1,851	1,817	2,005	2,060	2,287	2,060	2,316	2,752	23,278
Wassermann (spinal fluid)	11	31	22	21	21	23	45	46	75	70	69	56	490
Complement fixation test for gonorrhea	48	67	74	136	152	121	156	155	207	199	232	321	1,868
Complement fixation test for tuberculosis	36	41	57	65	102	100	136	112	166	170	171	220	1,376
Blood for malaria	25	7	4	13	8	3	2	7	0	8	3	13	93
Diphtheria cultures	75	113	793	806	1,442	2,794	739	356	272	137	129	188	7,843
Typhoid (Widal)	184	173	189	187	181	194	115	117	87	77	113	147	1,764
Paratyphoid (Widal) A	184	165	189	187	181	193	115	117	87	77	113	147	1,755
Paratyphoid (Widal) B	184	165	189	187	181	193	115	117	87	77	113	147	1,755
Sputum for tuberculosis	546	551	572	562	560	660	689	633	677	778	738	643	7,394
Pus for gonorrhea	177	167	230	239	310	282	214	201	245	218	255	284	2,822
Feces for typhoid	4	54	34	42	28	7	5	12	42	11	20	11	270
Colloidal gold	12	0	0	0	0	0	12	17	28	30	27	15	141
Urine—													
Chemical	13	11	14	14	4	0	37	54	68	27	23	19	284
Microscopical	13	11	14	14	4	0	37	52	68	27	34	21	295
Spinal fluid—													
Chemical	3	2	0	0	3	0	11	16	11	27	16	9	98
Microscopical	3	1	0	0	3	0	11	16	11	26	18	9	98
Miscellaneous	62	19	9	16	18	54	17	45	56	34	16	38	384
Total examinations	3,037	3,184	3,856	4,100	5,051	6,339	4,423	4,189	4,429	3,952	4,406	5,040	52,008

In Table 14 is a list by months of examinations made at the main laboratories at Springfield.

The branch laboratories have been of increasing service, but due to a limited appropriation, it has been necessary to confine their efforts to the diagnosis of diphtheria. These branch laboratories could be infinitely more useful if they were put on a salary basis instead of a piece-work basis as now, with the understanding that all diphtheria cultures must be examined, whether for diagnosis, quarantine release or inspection. It would also be advantageous to have branch laboratories at rail centers like Chicago and East St. Louis, for the examination of all specimens submitted. The time consumed in getting back reports on specimens submitted would be infinitely shorter, making the small extra expense well worth while.

In Table 15 is a list of branch laboratories, their location, the bacteriologist in charge and the number of diphtheria examinations made during the last year:

TABLE 15—EXAMINATIONS MADE AT BRANCH LABORATORIES FOR FISCAL YEAR 1920–21.

	Diphtheria examinations.
North Branch, Chicago—(Dr. T. C. Abel, 7 W. Madison)	2,804
South Branch, Mt. Vernon—(Dr. W. H. Gilmore)	2,218
Northwest Branch, Moline—(Dr. Maude J. Vollmer, Lutheran Hospital)	1,012
North Central Branch, Ottawa—(Dr. Roswell Pettit, Illinois Valley Laboratory)	232
East Branch, Urbana—(Dr. F. W. Tanner, Chemistry Building)	710
West Branch, Galesburg—(Dr. S. G. Winter, Bank of Galesburg Bldg.)	985
Total, 1920-21, all branches	7,961
Total, 1919-20, all branches	3,412
Total, 1918-19, all branches	3,058

The total examinations for all laboratories during the past year was 59,969 as against 37,509 for the year before and 15,061 for the preceding year.

Besides examinations made at the various State laboratories, the department has cooperated with private and municipal laboratories by supplying culture media, thus making it possible to have the work done locally with quicker and better reports. It also took away from the personnel of the State laboratories the strain of examining large numbers of cultures at a time when they were already overcrowded with work. During the year, 4,125 tubes of culture media were distributed, besides mailing containers and supplies.

BIOLOGICAL SECTION.

For several years past, it has been the hope of the Department of Public Health to obtain suitable quarters and sufficient personnel to produce the biological products required for distribution throughout the State. At the present time this practice seems inadvisable and the necessary biologics are being purchased under contract from reputable commercial laboratories. The personnel of the biological laboratory is engaged in diagnostic work, in the checking up of biologics purchased

and in research work. It is hoped that eventually, sufficient help will be obtained in the diagnostic section so that the biological laboratory staff may devote its time to necessary research work and to the care of biologics purchased.

Table 16 shows a list of biologics purchased during the last year with the approximate amount of money paid in each instance:

TABLE 16—BIOLOGICS PURCHASED DURING FISCAL YEAR 1920-21.

Diphtheria antitoxin	$57,347.58
Triple typhoid vaccine	2,415.79
Silver nitrate	2,130.00
Anti-anthrax serum	292.50
Schick test material	30.76
Total	$62,216.63

During the coming year toxin-antitoxin (for vaccination against diphtheria) will be added to the list of products named above and will also be distributed without cost to citizens of the State.

The appropriation for biologics is entirely inadequate. During the past year, an emergency appropriation was passed by the Fifty-second General Assembly for $30,000 to enable the department to finish out the year, the fund for these products having been completely exhausted when the year was half over. The demand for these products is growing constantly, as it should. In no other way can the State save lives with the expenditure of so little money as by furnishing an adequate supply of preventive and curative biologics. Probably the coming year will see the fund entirely exhausted and the distribution of such material temporarily stopped.

SUPPLY SECTION.

The supply section is engaged principally in the distribution of mailing containers for the submission of specimens to the various laboratories. This work is more important than it might seem to a casual observer. It is necessary not only to keep all sections of the State supplied with the various kinds of containers, but to see that all containers sent out are in proper condition. Carelessness in the matter of Wassermann containers might mean many badly infected arms from improperly sterilized needles.

Specimen containers are sent to more than four hundred antitoxin agents throughout the State, to clinics and dispensaries, and to private physicians as requests come in from them. Six different specimen containers are now in use, (1) a sterile test tube for specimens of blood and spinal fluid (sterile bleeding needle included), (2) a vial containing creosol solution for specimens of sputum for tubercle bacilli, (3) a vial containing 30 per cent glycerin for specimens of urine, blood or feces to be cultured for typhoid bacilli, (4) a sterile cotton swab for throat cultures, (5) microslides for pus and blood smears and (6) parchment paper for blood for Widal tests.

In Table 17 is shown the number of mailing containers sent out during the last year.

TABLE 17—MAILING CONTAINERS DISTRIBUTED FROM JULY 1920 TO JUNE, 1921.

For.	Sputum.	Wassermann.	Microscope slides	Diphtheria.	Widal.	Feces.	Others.	Total.
July	737	2,056	380	391	262	207	9	4,062
August	1,051	2,036	322	325	189	186	12	4,111
September	916	2,601	273	547	264	76	5	4,682
October	1,230	2,642	599	2,927	503	51	13	7,965
November	913	2,342	546	6,467	288	44	48	10,648
December	802	2,504	311	2,830	147	9	45	6,648
January	1,622	2,935	907	2,870	438	475		9,258
February	877	2,271	422	1,292	165	97	15	5,139
March	1,158	3,640	493	683	162	167	6	6,309
April	1,151	2,268	362	491	184	148	8	4,602
May	918	3,738	629	715	180	61	12	6,253
June	794	2,694	490	692	233	79		4,982
Total	12,179	31,718	5,724	20,230	3,035	1,600	173	74,659

Total for fiscal year 1920-21	74,659
Total for fiscal year 1919-20	36,524
Total for fiscal year 1918-19	11,009

As will be seen from a comparison between Table 17 and Tables 14 and 15 the number of mailing containers distributed is considerably in excess of the specimens received. While a few containers without doubt find their way to other laboratories, still the discrepancy is mainly accounted for by expansion. The number of containers sent out on the average equals the number of specimens received six months later.

The distribution of biological products which would normally come under the supply section is done by the Division of Communicable Diseases. The latter division formerly handled these products and has all the necessary machinery for this work, therefore, a change is inadvisable.

The distribution of specimen containers in emergencies is a matter requiring special attention. While the various antitoxin agents have a small supply of containers on hand at all times, very often it is necessary to telegraph in for a greater supply in cases of epidemics. Under the present system the field men and district health officers of the department may be delayed for two days in accomplishing a given task while waiting for the supplies to come by mail from Springfield. Distributing stations at rail centers such as Chicago and East St. Louis would save many hours of time in emergencies such as epidemics. These distributing stations could be installed at the branch laboratories at those places.

CLERICAL SECTION.

The function of the clerical section is to report promptly the results of all examinations made in the laboratories, to keep proper records of all examinations made and, in conjunction with the Division of Communicable Diseases, to keep records concerning the distribution of the

biological products. In addition to the above service, duplicate copies of reports have been sent to the Division of Communicable Diseases, the Division of Social Hygiene and to the district health officers.

RABIES SECTION.

The Fifty-first General Assembly appropriated $4,000 for the biennium for services in treating persons bitten by dogs suspected or proved to be rabid. Of this money, $2,522 was expended in two years. The present system consists in sending patients unable to pay for treatment to a hospital in Chicago, where the county pays the travel and living expenses and the State pays for the services of administering the anti-rabic vaccine. In such instances an attendant must accompany the patient, entailing double expense for the county besides the inconvenience for all concerned of bringing all such patients to one place. A much more efficient system would be to allow the patients to be treated at home, or in the nearest hospital, the local physician receiving the material for treatments by mail.

RESEARCH.

Among the functions of the Biological and Research Laboratories are the search for improvements in the laboratory diagnosis of the communicable diseases and the study of the manner and spread of diseases. Because of the pressure of other work no great amount of time could be given to research, but, as opportunity has permitted, three different matters have been taken up. The Sachs-Georgi precipitation test for syphilis has been studied carefully and some modifications made which warranted the publication of a paper on the subject (Journal of Immunology, Vol. 6, November, 1921, p. 521).

The study of anthrax in shaving brushes resulted from the accidental infection of a man from a newly purchased brush. From fifty-eight brushes examined, thirty-five showed contamination with the anthrax organism. These were all cheap brushes made of horse hair. Of twenty-three higher priced brushes not one showed such contamination.

The study of poliomyelitis in relation to paralyzed animals was undertaken after several instances came to the attention of the department where cases of poliomyelitis developed on farms two or three weeks after certain of the farm animals became paralyzed. The study included chickens, hogs, and horses. The problem was not solved, however, and no definite conclusions drawn from the work done.

EDUCATIONAL WORK.

Every opportunity has been seized to disseminate information concerning the spread and control of the communicable diseases. The division took part with the rest of the department in the exhibits at the State Fair and at the Health Show in Chicago. At various times, the

chief of the division has furnished articles for publication in "Health News" and has filled speaking engagements. From time to time some of the public schools have desired culture media for use in class work and cultures of some of the non-pathogenic bacteria for demonstration purposes. These requests have been filled. Besides nurses and physicians who have spent from a few hours to several weeks in the laboratory for instruction purposes, several classes conducted by the United States Public Health Service for the study of tuberculosis were conducted in the laboratory for the discussion and demonstration of laboratory diagnosis of tuberculosis.

MONETARY VALUE OF WORK OF DIVISION.

Through efficiency in grouping operations and through reduced overhead costs from large volumes of work, the laboratories have been able to cut the cost of making laboratory examinations to a minimum. For instance, a Wassermann test ordinarily costing $5 is done for less than 40 cents, this including the cost of the mailing container and the stenographer's time and postage for sending the report. The biological products purchased are obtained through competitive bidding far below what an individual must pay. In Table 18 is given a summary of the assets and liabilities of the division.

TABLE 18—ESTIMATED ASSETS AND LIABILITIES OF THE DIVISION OF LABORATORIES FOR THE FISCAL YEAR 1920–21.

Laboratory examinations valued at commercial rates		$212,583.00
Biological products distributed valued at market price		296,682.75
Services for rabies vaccine		1,261.00
Estimated total assets		$510,526.75
Cost of operating laboratories including salaries	$19,466.04	
Cost of biological products purchased	62,216.63	
Cost of rabies vaccine	1,261.00	
Total liabilities		82,943.67
Profit to State of Illinois		$427,583.08

From this table it will be seen that the laboratories did an estimated amount of almost half a million dollars worth of business with an estimated profit to the State of more than four hundred thousand dollars.

DEVELOPMENT OF LABORATORIES.

It was in 1904 that the Board of Health, with money appropriated for sanitary investigations, secured the services of a bacteriologist and opened a laboratory for the examination of sputum for tubercle bacilli, cultures for diphtheria bacilli, blood for Widal tests and blood for malaria parasites. Since that time the laboratories have occupied quarters in five different locations and been directed by twelve different chiefs. In spite of this fact, they have grown steadily both in scope and value of work,—from 1,425 total examinations in 1905 to 59,969 in the year just passed.

It was about 1914 that the first branch laboratories were opened and in 1919 that the Biological and Research Laboratories were added,

with a fund for procuring biological products. (Biological products were distributed at cost from 1905 to 1909, then distributed free, the money being appropriated from other funds).

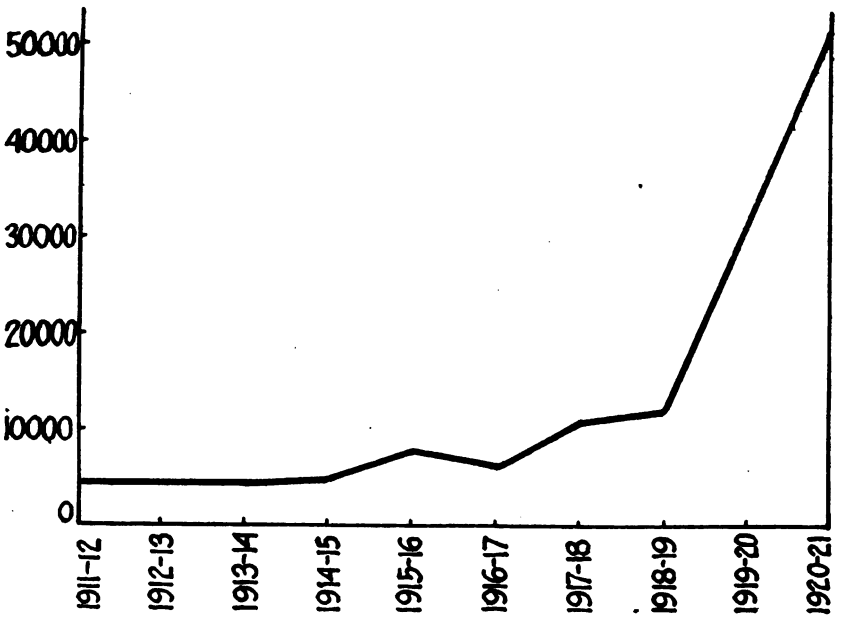

Figure XXIII—Total Examinations Made at Diagnostic Laboratories, 1911-21.

In Table 19, and Figure XXIII, growth of the main laboratory at Springfield, is indicated by the total number of specimens examined in the last ten years:

TABLE 19—TEN YEARS GROWTH OF THE MAIN LABORATORIES.

	Total examinations.		Total examinations.
1911-12	4,249	1916-17	6,013
1912-13	4,442	1917-18	10,499
1913-14	4,222	1918-19	12,003
1914-15	4,611	1919-20	31,494
1915-16	7,579	1920-21	52,008

This rapid development is constantly bringing up new problems—quarters, personnel, appropriations, laboratory supplies. The very near future must solve many of them.

FUTURE DEVELOPMENT.

The last two years have seen a very rapid rise in laboratory work. Using as an index the number of mailing containers distributed in excess

of the number of specimens received during the last six months of the year (January to June), an increase of 40 per cent in the number of specimens received may be expected the coming year. The present personnel is adequate to care for this increase but the laboratory quarters are unsuitable. Already part of the laboratory force has been crowded out of the State House into the laboratories five miles north of the city, which were intended for production of biological products. This separation of the laboratory force is most unsatisfactory, as a five mile trip by automobile is required to get from one laboratory to the other and no adequate telephone service exists. Prompt reports in emergency cases are almost impossible to obtain under these circumstances.

Among the objects to be worked for and the problems for solution in the future are the following:

a. More adequate quarters for the main laboratory so that the force will not have to be divided.
b. The extension of branch laboratories to cover the State more fully and payment upon a salary basis.
c. The establishment of branch laboratories at such rail centers as Chicago and East St. Louis, which will be capable of making all examinations, thus affording quicker diagnoses, and relieving the congestion at Springfield.
d. The establishment of distributing stations for specimen containers at Chicago and East St. Louis.
e. The relief from diagnostic work of the biological section so that it may indulge in research, and the control of the biological products purchased.
f. The distribution of rabies vaccine to local physicians, making it unnecessary to send patients bitten by rabid dogs a long distance for treatment.
g. A better organization of the laboratory service in the department, which service at present is scattered throughout the divisions.
h. Fuller cooperation with local laboratories, both private and municipal, to insure better laboratory service in the various localities around the State.

DIVISION OF PUBLIC HEALTH INSTRUCTION.

B. K. RICHARDSON, *Chief.*

For a number of years the activities that logically come under the functions of the Division of Public Health Instruction have been accomplished largely through the cooperation of various other divisions. With a complete change in the personnel during the fiscal year ending June 30, 1921, all of these activities have been assumed by the division. This change has resulted in a decided increase in the efficiency of carrying out the regular work and in an extension of the service rendered.

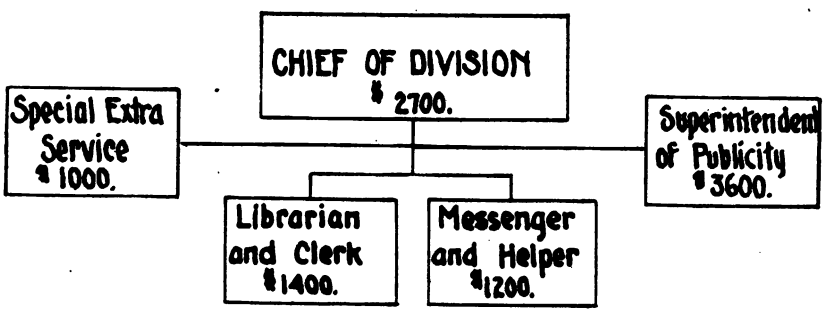

Figure XXIV—Divisional Organization for Biennium, 1921-1923.

Realizing that the ultimate success of public health service depends primarily upon education, every activity of the division has been planned and carried out with the end in view of disseminating in popular form the latest and most scientific thought in reference to the control and prevention of disease and the promotion of health.

Services rendered along these lines are almost purely educational in character and fall naturally into two sections, routine and special. This report is divided under these two headings, with an additional section on recommendations.

ROUTINE.

The most important regular work of the division is the publication of "Health News," the monthly bulletin of the department. Beginning with February, 1921, the bulletin has for the first time since the signing of the Armistice, been issued regularly during the early part of each month. Its style has been changed so that each number carries a symposium on some important and seasonal health subject, together with

discussions and statistical information relative to the prevalence of communicable diseases and the trend of public health administration in the State. The mailing list has been revised so that it now embraces a total of more than 13,000 names that include not only practically all physicians in Illinois, outside of Chicago, but thousands of lay workers as well. Its readers are found in every part of the world and its popularity finds expression through many letters of appreciation and a constantly increasing demand for its wider circulation. Its subject matter has been used freely not only by periodicals of almost every kind, but by the daily press as well.

Besides "Health News" the division issues and distributes special bulletins dealing with particular subjects. During the year 112,000 pamphlets of this kind were printed. They deal with the subjects of sanitation, infant and child care, tuberculosis, scarlet fever and general public health information for school children. In response to specific requests more than 200,000 pieces of literature, consisting of these and other pamphlets, were distributed through the division. When to this number is added that included in the various issues of "Health News," the grand total reaches 332,000 pieces. The significance of this service is all the more pronounced by reason of the fact that no attempt has been made to send these pamphlets indiscriminately or broadcast over the land, but every effort has been made to limit their distribution in such a way as to insure the greatest amount of educational and practical results.

The loan service constitutes a more and more important function of the division. In it is maintained exhibit equipment that includes motion picture films, lantern slides, posters, wall panels, cuts of public health cartoons and mechanical and still models. These are all available for public use without cost other than transportation charges one way. This material, with the exception of the models, which are shown largely during the fall months in connection with county fairs, has been constantly in use by various communities throughout the State. Due to the increased efficiency of the division all of the equipment, save that of the models, was used much more extensively during the second half of the year than was the case for the first half, or for any previous similar period. Table 20, at the end of this section, indicates the number of showings by months for the several different types of exhibit material and shows the decided increase that marked its utilization during recent months. In addition to the displays already made an unusually large number of reservations have been made for exhibitions during the first half of the coming fiscal year.

The remaining regular duties of the division may be classified under the headings of publicity, library service of the department and editing of division reports. The first consists of special material prepared for the daily press, for periodicals, for a weekly press service and

for daily and weekly newspapers. Two medical journals (one weekly and one monthly), a monthly public health journal and more than 800 daily and weekly newspapers, are regularly supplied with material of current value through this function. The matter submitted has been constantly utilized and doubtless has worked to the distinct and permanent benefit of the public.

The department library service has been so completely reorganized that it actually constitutes a new work. Beginning with the month of February, the periodicals for which the department subscribes are, upon receipt, loaned immediately to those members of the department staff who are most interested in the subject matter treated in particular publications. Articles of special merit are abstracted and the latter are kept on file in the division office. In this way the personnel of the department is kept in easy touch with current public health literature and the periodicals are more extensively read.

The third service mentioned includes the receipt and editing of reports, monthly, semi-annual and annual from the other divisions of the department. These are compiled in popular and readable form and published either in "Health News" or in special form.

The following tabulation shows by months the number of showings of the various types of exhibit material and the number of pieces of literature distributed, the number of books and periodicals taken from the library, and the number of letters written. Attention is particularly invited to the large increase along all lines for the latter part of the year:

TABLE 20.

1920-1921.	Films.	†Literature.	Posters.	Slides Sets.	Cuts.	Models.	*Books and Periodicals.	*Letters Written.
July	6	250			2			
August	12	500	244	1	4	1		
September	30	500	120	1	1	2		
October	4	500	60		4			
November	25	11,000	10		5	1		
December	33	1,500	50	1	2	1		
January	49	7,304	130		2		126	94
February	21	3,365	25				110	95
March	47	10,267	124		4		119	131
April	42	85,000	288	3	20	1	113	515
May	43	50,000	257	1			110	165
June	27	25,000	100		6		111	298
Total	345	200,186	1,652	7	50	6	859	798

* Records kept for last six months only.
† Monthly bulletin not included.

SPECIAL.

Four particular events constituted special work carried out by the division during the year. These relate to a State wide better babies conference, health promotion week, two displays of the entire exhibit equipment of the department, and the arrangement for health demon-

strations in connection with the Pageant of Progress in Chicago and the State Fair of Springfield.

The better babies conference is an annual event conducted by the department in connection with the State Fair at Springfield. This division is responsible for all the work incident thereto except that of the actual examinations and the consultation service that follows. In arranging for the conference the division not only prepared special rules, application blanks and score cards, but carried out a publicity program that resulted in the largest and most successful conference that was ever undertaken by the department. The total number of children examined was 756 compared with 250 for the first conference in 1915, and 542 for the fourth conference in 1919. The growth of the institution has been due to the fact that it has admirably fulfilled the educational purpose for which it was created and to the vigor with which the division has handled the work relative thereto from year to year. Nor has the growth of the movement been confined to the State conference alone. Local communities have come to realize the importance of creating a lively interest in the welfare of children and have followed the department in stimulating such interest through the medium of better baby conferences.

During the year the division furnished score cards and other material information relative to organizing and carrying out conferences to twelve different communities besides numerous other places where conferences were held in connection with health promotion week. This is mentioned for the reason that this widespread interest on the part of the people in a movement so significant and important, demonstrates to the department that a broad field of service is now open and that through the better baby conference movement a vast amount of educational service can be accomplished that otherwise would be almost, if not wholly, impossible. Indeed, with the interest displayed during the latter part of the year in work of this kind, it is not too much to anticipate that a few more years will see the better baby conference with as definite a place in the program of every county fair in the State, as live stock now holds.

Health promotion week is also an annual project. Each year, either by legislative resolution or by proclamation of the Governor, a week is set aside for the study of public health problems and the promotion of health. The State Department of Public Health is charged with the duty of carrying out a suitable program on a State wide basis and this division is responsible for the success of the undertaking. This year the week designated was April 17-23, and the campaign was put in motion with more vigor than at any previous time since the inauguration of the event. It is significant to note that the week was generally observed throughout the State, although the campaign work was accomplished through the division without unusual or special expense and

with but a limited amount of help from other divisions of the department. More than 8,300 individual letters were sent out by the division to health officers, mayors, nurses, school superintendents and principals, members of women's clubs, Y. M. C. A. and Y. W. C. A. officials and others. In addition to this the daily press was supplied with publicity material for two weeks in advance and during the entire week, while a considerable quantity of literature was prepared and issued in pamphlet form. Altogether more than 85,000 pieces of literature were distributed and the exhibit material of the department was in constant use during the week. Communications from 119 communities brought the information that a definite program was carried out in that number of places, and doubtless many other localities observed the occasion in an appropriate way. Perhaps the most encouraging feature of the program grows out of the success of the movement in stimulating during the week the establishment of some permanent public health service. That this was done in many places has been proved by subsequent developments and the fact that public health nursing service and better baby conferences have been put on a permanent basis in many places.

Not least in importance of the special work done by the division during the year was a display of the entire exhibit equipment at the State Fair and at the Coliseum in Chicago. While only a relatively limited number of the people in the State can be reached on these occasions, still the presentation of fundamental health principles by means of mechanical and still models makes such a pronounced and lasting impression on all who see them that it is felt to be an important educational medium. As a result of the two demonstrations mentioned above the division has received thousands of requests for detailed information along the lines suggested by the exhibit. Many requests also for the use of the exhibit material from both local communities and agencies in other states have been received.

The closing of the year finds the division engaged in two important pieces of work, the arrangement for an unusually elaborate public health demonstration in connection with the Pageant of Progress to be held on the Municipal Pier in Chicago, and the preparation for the Sixth Annual Better Babies Conference to be held at the State Fair in Springfield. For the first of these the division has supervised the purchase and in most cases the construction of fifteen new models, eight of which are mechanical, and has made all provisions for carrying out the demonstration. The models have been built in a manner that makes them suitable for future use, and these together with three new films and fifty-two new wall panels recently purchased, give the department an unusually large and up-to-date equipment that is believed to be one of the most complete in the country.

The second piece of work embraces the State better babies conference. Practically all of the material is on hand and arrangements have been made to open the publicity campaign.

RECOMMENDATIONS.

Two reasons explain why the most urgent recommendation of this division is for an increase in personnel. These are the unusual growth and popularity of the better babies conference movement and the widespread demand for public health demonstrations. Both offer exceptionally effective means for educating the public in constructive public health work and preventive medicine, and the practical usefulness of the former is limited only by the ability of the department to introduce and establish it in the right way. If the department fails in this duty local baby conferences will be established without its assistance and in many instances they will be conducted in the form of a show without giving the educational benefits for which the movement was originally inaugurated, and to gain which constitutes the only practical reason for its continuity and extension.

It is, therefore, strongly recommended that two full-time nurses be attached to the division. Their duty will be to visit local communities that request such service and see that better baby conferences are organized and carried out upon the high standard and in the practical way established by the State Department of Public Health. Their services will relieve the division of the necessity for calling upon other divisions for personal assistance of this kind, that has in the past been given, often at the expense of neglecting other important work. When not needed for this type of work, which is heaviest during the seasons of the year (from April to October) when better baby conferences are most practical, they would be available for duty under the State supervising nurse.

The exhibit equipment now consists of such an extensive amount of material and the demand for its use is so widespread, that an assistant is needed to supervise its handling, care and exhibition. In addition he would be expected to make schedules for health demonstrations.

With these additions the personnel would be ample not only to extend its educational service along every line during the next biennium but at the same time develop greater efficiency.

DIVISION OF SOCIAL HYGIENE.

G. G. TAYLOR, M. D., *Chief.*

Since its creation on July 1, 1918, the Division of Social Hygiene has functioned in a capacity designed to suppress, control and eradicate venereal diseases. Each succeeding year has made more and more apparent the startling prevalence of these diseases and has demonstrated to a high degree the value of and necessity for the work carried on by the division.

The first year of its existence the division was furnished wholly by the Federal Government, from which source, it drew and expended $66,307.51. During the next two fiscal years, the second of which ended June 30, 1921, it received jointly from the Federal and State funds $100,000 annually. Early in 1921, however, it became known that Congress had refused to make further appropriations for this service on the grounds that social hygiene programs at their inception, were war measures and no longer justified Federal aid and also had become so firmly established in many sections of the country and had so demonstrated their economic and social importance, that states generally would feel impelled for the public good to continue and extend these activities.

This was the case in Illinois. More than a score of clinics had been established upon a subsidy basis and their continuity depended, in most cases, upon favorable legislative action whereby sufficient funds would be made available to affect the stoppage of Federal aid. Not only was the existence of the clinics in jeopardy, but the expansive educational program that had been a leading feature in the venereal disease campaign faced the possibility of serious curtailment. The situation was presented to the Fifty-second General Assembly by the newly appointed Director of the department and that body saw fit to increase the State appropriation for the division from $50,000 to $100,000 per annum, so that the venereal disease program as outlined and instituted by the department will be continued in all of its essential features during the coming biennium.

For the fiscal year just closed the work of the division proceeded along lines established at the outset. These conform, in general, to the venereal disease program suggested by the Inter-departmental Social Hygiene Board, which board was created by act of Congress for the purpose of administering funds appropriated for venereal disease control. The functions of the division are classified, as shown in the accompany-

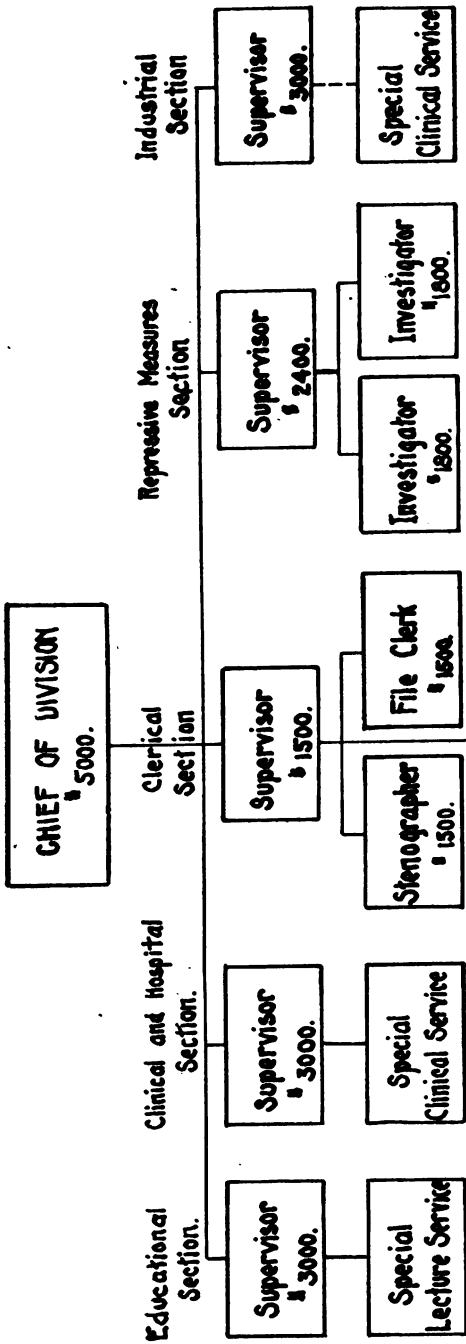

Figure XXV—Divisional Organization for Biennium, 1921-1923.

ing chart, under the headings of treatment, repressive measures and educational measures.

TREATMENT.

Since every case of venereal disease arises by contagion, direct or indirect, it follows that early and thorough treatment of infectious cases must have an important preventive action. In other words, the widespread provision of facilities for prompt treatment is a measure not only beneficial to the individual concerned, but also of exceedingly great importance as a protective measure to the community in which he lives.

The division has, therefore, persistently worked for the establishment and maintenance of free clinics for all sufferers who are financially unable to secure the services of a reputable physician. At the close of the year eighteen such clinics were in operation under the direction of the division. They were all working upon the subsidy plan whereby the division and the community bear jointly the expenses and which was described in detail in the third annual report. No new clinics were established under the division during the year for the reason that the necessary funds for subsidizing them were not available. On the other hand, every effort has been made to secure the greatest possible efficiency from those in operation and to encourage the establishment of clinics without subsidy. That the efficiency was greatly improved is demonstrated by the fact that a total of 37,254 persons were treated for venereal disease infection during the year against 30,005 for the year before.

The clinics established are designed to offer:

First, the examination of all pathological material for diagnostic purposes;

Second, provision for the modern forms of treatment for all venereal diseases;

Third, free supply of salvarsan or its substitutes in suitable cases;

Fourth, opportunities for consultation on cases between the directors of the clinics, district health officers, and any practitioner who cares to avail himself thereof;

Fifth, opportunities for physicians and students to familiarize themselves with modern methods of diagnosis and treatment.

Clinics in operation at the close of the fiscal year are located at Alton, Cairo, Carlinville, five in Chicago, Chicago Heights, Decatur, East St. Louis, Litchfield, Moline, Peoria, Rockford, Rock Island, Springfield and West Hammond.

The work accomplished at these clinics during the year is summarized as follows:

	Male.	Female.
Patients hospitalized	211	151
Number patients discharged	3,007	1,269
Number patients discontinuing treatment	2,724	1,554
Number patients placed in detention	47	195
Total number cases of disease treated		37,254
Total number treatments administered (including arsphenamine)		135,075
Number Wassermann tests		21,120
Number of microscopic examinations for the treponema pallidum		1,130
Number of microscopic examinations for the gonococcus		14,373
Number of doses of arsphenamine administered		27,634
Number of ampoules arsphenamine distributed by division		19,618

The following is a tabulation (Table 21) of complete venereal disease reports received by the Illinois Department of Public Health for the year ending June 30, 1921:

	Gonorrhea.	Syphilis.	Chancroid.	Total.
Age—				
1-12	53	80	----------	133
12-16	84	121	5	210
16-20	735	301	39	1,075
20-30	2,579	1,326	167	4,072
30-40	673	598	57	1,328
40-50	237	310	16	563
50 and over	87	182	13	282
				7,663
Sex—				
Male	3,528	1,889	263	5,680
Female	920	1,029	34	1,983
				7,663
Color—				
White	4,096	2,324	247	6,667
Black	352	594	50	996
				7,663
Social status—				
Single	3,145	1,432	223	4,800
Married	1,045	1,037	42	2,124
Widowed	117	207	14	338
Divorced	141	242	18	401
				7,663
Place—				
City	3,431	2,298	235	5,964
Town	1,017	620	62	1,699
				7,663
Occupation—				
Business man	209	86	10	305
Chauffeur	105	54	9	168
Clerk	338	174	19	531
Cook or waiter	66	98	3	167
Farmer	244	146	10	400
Idle	447	396	16	859
Laborer	2,004	922	171	3,097
Mechanic	108	79	14	201
Miscellaneous	809	839	42	1,690
Prostitute	118	124	3	245
				7,663
Laboratory finding —				
Positive	2,588	2,159	60	4,807
Negative	124	161	53	338
None	1,736	598	184	2,518
				7,663
Residence—				
Boarding House	1,014	579	105	1,698
Home	3,045	1,875	163	5,083
Hospital	86	123	8	217
Hotel	173	138	12	323
Institution or jail	130	203	9	342
				7,663
Source of infection—				
Contracted	3,904	2,322	246	6,472
Inherited	544	596	51	1,191
				7,663
Investigated	488	302	140	930

	Gonorrhea.	Syphilis.	Chancroid.	Total.
Stage—				
Primary or acute	2,973	847	124	3,944
Secondary or subacute	591	851	89	1,531
Tertiary or chronic	884	1,220	84	2,188
				7,663
Discontinued employment	720	546	64	1,330
Handling foodstuffs	121	136	4	261
Patients under treatment	4,448	2,918	297	7,663

Number complete reports received from physicians from which above tabulation was made	7,663
Number incomplete reports received from physicians, druggists, State institutions, clinics and the Chicago City Health Department	30,240
Total cases reported for the year ending June 30, 1921	37,903
Total cases reported for the year ending June 30, 1920	31,876

REPRESSIVE ACTIVITIES.

It was pointed out in the third annual report that in order to prevent the spread of venereal diseases it is necessary to render noninfectious every carrier of these diseases and to prevent contact between healthy and diseased persons. Efforts to accomplish the first of these, it was shown, came unquestionably under the jurisdiction of health departments while activities bearing upon the second proposition always meet with considerable opposition.

Public opinion in this country has long since been directed against open prostitution for it has been recognized fully that such practice constitutes an easy opportunity for the widespread exposure of healthy persons to venereally infected persons. On the other hand, investigations have shown that clandestine prostitution has gone on apace and that the most rigid measures are necessary to prevent the segregation and public operation of persons engaged in this nefarious business. In many cases the local officials simply wink at such practice and unless pressure is brought to bear from some State source the laws that prohibit prostitution are of no avail.

During the year, therefore, the suppressive work of the division has been directed chiefly toward securing the cooperation of city and county officials in law enforcement. This has been done through the investigation of vice conditions and the presentation of information thus obtained to the local authorities. Forty investigations of this kind were conducted during the year in various parts of the State with the result that 930 sources of infection were brought to light and the persons placed under treatment. In five instances the municipal officials saw fit to pass local ordinances so that such cases can be prosecuted with more dispatch in the future.

Legal control measures have been greatly strengthened during the year because of court decisions in several cases. In North Carolina the Supreme Court affirmed a judgment allowing a wife to recover damages in the sum of $10,000 from her husband because he had infected her

with a venereal disease. In Oklahoma a man was sentenced to five years in the penitentiary for infecting a girl with syphilis. A Nebraska court upheld a doctor who had warned an hotel keeper that one of his patients, a guest at the hotel, had syphilis and had refused treatment and was consequently a menace to the public health. All three cases are valuable in counteracting incorrect opinion that the venereal disease law falls almost exclusively on women and in placing personal responsibility for the transmission of venereal disease. The Nebraska case carries particular significance since it asserts that a physician's duty to protect the public health may, under certain circumstances, transcend his duty to hold his patient's confidence inviolable.

Following is a summary of the suppressive activities of the division during the year:

Number of State laws passed during period (appropriation)	1
Number of city ordinances passed during period	5
Number of prosecutions of violators of ophthalmia neonatorum law	2
Number of vice investigations	40
Number sources of infection investigated and placed under treatment	930

EDUCATIONAL WORK.

In considering what can be accomplished by educational methods in checking venereal disease, it is desirable to arrive at an understanding as to what is meant by education. Mere instruction in the presentation of definite facts is not really education. The real problem of education should be restricted to its literal sense of leading the mind in the proper habits of thought and a right outlook on the problems of life. In this way education can be of use only indirectly by helping to guide the activities of individuals toward a right standard of conduct. In other words, education must aim at developing the self control necessary to keep in check the sexual instinct and at inculcating into the individual sound principles of social morality; in addition to this, instruction in the facts relating to venereal disease and its many consequences to the individual and the race. Education along these lines is a process which must be begun early in life as a foundation on which to base a knowledge of the subject.

There are two separate propositions to consider, first, in what way the general scheme of education can be reinforced so as to make a higher standard of conduct; second, whether, and if so, how far actual instruction in the facts of biology and venereal disease should be introduced into the educational system of the adolescent.

The first step should be taken in early life while the child is entirely under parental control. Parents should be encouraged to realize that their responsibility begins early. A successful system of education should aim not only at equipping young people with a knowledge of facts but also at moulding character along the lines best adapted for developing them into useful citizens. Early teaching in these matters forms a vital part in the standard of conduct for the years to follow. The ideals thus established should form the basis of future action.

The subject of sex should be taught from a scientific standpoint with the elimination of the intensively personal application that is so apt to hamper its approach under the usual conditions of today. The instruction should be not merely a scientific one, the sentimental or emotional side of the subject should also be made use of in an endeavor to implant sound ideals of sexual conduct. Chivalry, the protection of the weak, the sanctity of maternal devotion, should play their part in the building up of such ideals. In the opinion of this division it is to the teachers, elementary and secondary, that we must look for the sex education of the children of today.

The second problem in education, namely, instruction in the facts of biology and venereal disease, requires careful consideration. To what extent a knowledge of such principles has any influence in developing character along moral lines is still a question. More careful instruction should be provided in regard to moral conduct as bearing upon sexual relations throughout all grades and types of education. Such instruction should be based on moral principles and spiritual considerations, and should not be based only on the physical consequences of immoral conduct. It would perhaps be a good practice for medical men to conduct classes in general hygiene and to use these classes for the purpose of presenting the necessary information on these subjects.

If a medical man is selected to conduct classes in general hygiene the instruction should include:

(a) A description of the two diseases, gonorrhea and syphilis, with their complications, sequelae, and the effects on the offspring;
(b) Insistence on the need of early and sufficient treatment, the danger of concealment, and the danger from use of quack remedies;
(c) Prevention guaranteed only by keeping out of the way of possible infection;
(d) Exposure of the fallacy that only professional prostitutes are dangerous—in many cases, the amateur is equally or more dangerous;
(e) Denunciation of the idea that continence is ever harmful and that incontinence is an essential attribute of manliness;
(f) The contributory effect of alcoholic indulgence by diminishing self control.

With the firm conviction that permanent and lasting benefits in the control of venereal diseases can accrue only through educational measures, no matter how important treatment and suppressive measures may be, the division has given a constantly increasing amount of time and thought to this important function. To the educational methods employed in the past was added, during the year, the publication of a monthly bulletin, known as the Social Hygiene Monthly.

The first issue of the bulletin was published September 1, 1920. Since that time it has been in the mails promptly on the first day of each month. It was created for the purpose of establishing a closer relationship between the practicing physicians of the State, the assistants operating venereal disease clinics and other persons particularly interested in social hygiene and the Division of Social Hygiene. The mailing list contains the names of practically all physicians in Illinois, outside of Chicago, as well as numerous others. That it has filled its mission well and rendered a service far more beneficial than the author had

dared hoped, has been generously demonstrated in the practical results that have followed and in the most favorable recognition of its value by the United States Public Health Service and others.

The lecture work of the division has been carried on vigorously and effectively. Altogether 311 lectures and addresses, or an average of more than one daily, with Sundays and holidays excluded, have been made during the year, with a total attendance of 67,938. Many of these lectures were illustrated with the motion picture films and stereopticon slides owned by the division. In addition to this thousands of pieces of literature have been distributed and several social hygiene demonstrations made.

EDUCATIONAL SUMMARY.

Number of lectures and addresses given	311	
Attendance		67,938
Number of days slides and charts shown	81	
Attendance		180,988
Number film showings without lecture	54	
Attendance		13,600
Total attendance		262,526
Number of requests for pamphlets received		5,173
Number of pamphlets distributed		306,241
(a) In response to specific requests	180,253	
(b) By circularizing mailing lists	79,727	
(c) To clinics, lecturers, field workers	46,261	
Number of pamphlets purchased and reprinted		150,500
Number of exhibits purchased		34
Number of films purchased		2
Number of booths purchased		2
Publicity material—number of references to venereal disease work noted in newspapers and magazines		107

COMPARATIVE STATEMENTS OF THE ACTIVITIES OF THE DIVISION OF SOCIAL HYGIENE FOR THE YEARS ENDING JUNE 30, 1919, 1920 AND 1921.

Number of.	1919	1920	1921
Clinics subsidized	6	20	(a) 18
Clinics reporting	6	32	(b) 26
Cases hospitalized	0	1,360	(c) 362
Wassermann tests	0	13,090	21,120
Microscope tests for gonococci	0	8,732	14,373
Cases discharged as cured	172	2,624	4,276
Cases discontinuing treatment	0	3,296	4,278
Cases treated	3,926	30,005	37,903
Treatments given	9,304	98,754	135,075
Slides and chart showings	49	322	*81
Attendance at same	15,750	49,387	180,988
Lectures	284	572	(d) 311
Attendance at same	28,400	97,357	67,938
Film showings	250	(e) 126	(f) 54
Attendance at same	37,500	18,112	13,600
Pamphlets distributed	370,000	654,205	306,241
Cases reported—			
Gonorrhea	3,223	4,275	4,448
Syphilis	851	2,329	2,918
Chancroid	126	306	297

REMARKS:

(a) Waukegan Clinic discontinued February, 1921. Grand Crossing Clinic—State subsidy ceased June 30, 1920.
(b) Thirty-three clinics reported during first six months; twenty-six reported during second six months.
(c) Patients report regularly for treatment but are not hospitalized.
(d), (e), (f) and (g)—Appropriation insufficient, nessitating reduction in personnel.

DIVISION OF LODGING HOUSE INSPECTION.

WILLIAM W. MCCULLOCH, *Superintendent.*

INSPECTIONS.

During the period covered by this report, July 1, 1920, to June 30, 1921, considerable time has been devoted to the measuring and inspecting of lodging houses, boarding houses, taverns, inns and hotels of record. There were also several houses measured and inspected of which there was no previous record.

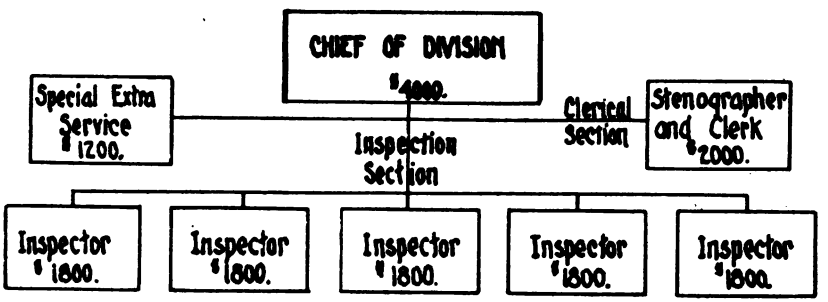

Figure XXVI—Divisional Organization for Biennium, 1921-23.

The number of lodging houses, boarding houses, taverns, inns and hotels inspected, measured and remeasured is as follows:

	Measured.	Remeasured.
1920—		
July	18	24
August	49	26
September	67	39
October	83	44
November	117	14
December	124	10
1921—		
February	5	
March	15	
April	7	
May	16	2
June	34	24
Total	535	185

The inspections of said lodging houses, boarding houses, taverns, inns and hotels showed the total number of rooms to be 16,943; number of lodgers 11,738; present capacity 20,334 and legal capacity 39,353.

For the same period the inspectors reported 122 lodging houses, boarding houses, taverns, inns and hotels as having gone out of business, 67 vacant and 19 torn down.

Below is shown the number of lodging houses, boarding houses, taverns, inns and hotels in which a supplemental inspection was made, together with the number of rooms inspected, the number of lodgers at time of inspection and the number of lodgers for which there were sleeping accommodations:

	Suplemental inspections.	Rooms.	Lodgers.	Present capacity.
1920—				
July	168	3,144	2,367	4,354
August	214	3,270	2,331	4,362
September	211	3,259	2,456	4,460
October	167	3,000	2,452	4,170
November	52	809	465	911
December	130	8,797	7,879	11,802
1921—				
January	2	31	19	37
February	3	37	30	51
March	51	2,114	1,828	3,201
April	17	381	265	549
May	48	1,215	756	1,424
June	170	2,661	1,779	3,704
Total	1,233	28,718	22,627	39,025

During the months of January and February, 1921, the inspectors served notices on proprietors and managers of lodging houses, boarding houses, taverns, inns and hotels to file a sworn statement required to be filed March 1 each year. The inspectors served 6,308 notices on proprietors and managers of houses, which had residing therein 105,194 persons.

In April and May, 1921, the inspectors served 2,386 second or final notices on proprietors and managers of lodging houses, boarding houses, taverns, inns and hotels which had 25,931 guests therein. Proprietors and managers of these houses had failed to file with the county clerk the sworn statement required by the Department of Public Health to be filed March 1.

During the period of time covered by this report, 5,409 sworn statements were filed with the county clerk by the proprietors, keepers or managers of lodging houses, boarding houses, taverns, inns and hotels. The inspectors have from time to time been assigned to work in the office of the county clerk in connection with the filing of these sworn statements with the county clerk, and making copies thereof for the department.

On November 24, 1920, at the request of the Director of the department, Inspectors Charles H. Buenneke and William J. Angsten were assigned to work at the Coliseum in Chicago, and from November 24 to December 1, assisted with the exhibit of the Illinois Department of

Public Health in that building. Inspectors Edward B. Kirkbride and Edward Matthes also assisted November 30 in taking down and packing this exhibit for shipment.

June 6, 1921, Inspector Charles H. Buenneke submitted to me his resignation as lodging house inspector, the same to become effective June 10, 1921, and it was accepted.

The inspectors while making their inspections have found numerous violations of the public health laws pertaining to lodging houses, boarding houses, taverns, inns and hotels. These violations, which consist of over-crowding and insanitary conditions such as defective and leaky plumbing, lack of ventilation in sleeping rooms, filthy toilets, walls, floors, beds and bedding, inadequate water supply for toilet and other plumbing fixtures, and accumulations of rubbish and debris in basements, hallways and rooms, have been reported to me by the inspectors, and I have caused a written notice to be served by the inspectors on the proprietor of each house where such violation was found, directing that the management put the premises in sanitary condition and otherwise comply with the provisions of the Board of Health Act. In each case from three to ten days have been allowed in which to correct the conditions of which complaint was made. Most of these houses have been reinspected since the serving of such notices and the inspectors' reports show that the violations formerly complained of have been corrected.

DIVISION OF SURVEYS AND RURAL HYGIENE.

B. K. RICHARDSON, *Acting Chief.*

During the fiscal year that closed June 30, 1921, the Division of Surveys and Rural Hygiene lost its identity as an independent division and was made a part of the Division of Sanitation and Engineering. Prior to this change, however, which took place in February the division undertook and carried out a complete sanitary survey of the city of Quincy. The study was exhaustive and comprehensive in character. It led to recommendations that were offered as a practical means for solving many of the existing sanitary problems and for giving the city a well balanced and efficient public health service.

Steps have been taken for carrying out these recommendations in a large measure. A full-time medical health officer has already been employed and the machinery established for developing a well rounded department of public health. Funds to the sum of about $18,000 or about 50 cents per capita have been made available for health work for the current fiscal year. The full adoption of the recommendations submitted will find Quincy with one of the best municipal public health organizations in the State.

The report of the survey is presented herewith.

GENERAL INFORMATION.

Quincy is situated in Adams County on the east bank of the Mississippi River. The back country is of the more fertile section of the rich agricultural districts in Illinois and depends on Quincy to market a large percentage of its varied products.

The transportation facilities of Quincy are very good. Two railroad systems, the Wabash and the C. B. & Q., offer the city the advantages of rapid rail transit while river traffic is still considerable.

Quincy has a population of 35,978, according to the preliminary 1920 census returns. This shows a net decrease of 609 since 1910 when the census returns indicated a population of 36,587. The decrease in population is, no doubt, explained in part at least, by reason of the very low birth rate that prevails in Quincy coupled with the inroads upon the citizens by the influenza pandemic and the war casualities. It may be further observed that Quincy experienced no abnormal modification or change in character or size of population on account of war activities.

The people of Quincy come mostly from sturdy American stock. English and German extractions appear in about equal numbers. There is also a negro population of a little more than 1,000.

A close observer will detect a character of thrift that permeates the entire city. This trait applies to the German element almost to a fault.

Politics play a considerable part in the life of the city. This seems to be rather more true than usual in such communities. Perhaps the reason for this is found in the fact that the leading parties are almost equally divided so that community effort and community progress as such is rather hard to obtain.

Most of the progressive life in the city associates itself with the Chamber of Commerce and with the business men's clubs. Almost every measure of a progressive and permanent character finds birth in these organizations and depends upon them for support.

Quincy is an industrial city. Over two hundred products are made there and of these more than a score are manufactured in considerable quantity. Such things as foundry products, stoves, pumps and compressors, tractors, steel and wooden wheels, elevators, shoes, show cases, cereals, incubators, stock foods, strawboard and paper dyes, tobacco and wagons are among the more prominent of these products.

PUBLIC HEALTH SERVICE.

Public health service in Quincy is administered at present, through what is known as the Health Department. This department consists of the Board of Health, Commissioner of Health and his office assistant.

The Board of Health serves without pay and is composed of the mayor, who is its president, two aldermen and two physicians appointed by him. Monthly meetings of the board are required by city ordinance.

The working force of the health department consists of the Commissioner of Health and his office assistant. The commissioner is not a medical man and confines his activities to placarding houses for quarantine and the making of sanitary inspections. Since the size of the city makes frequent and regular inspections by one man a prohibitive task the commissioner is able to give his attention only to those conditions that warrant no delay in abatement.

The organization for public health administration has been changed in character and personnel from time to time depending largely upon party politics. With the arrival of May 1, 1921, the beginning of a new fiscal year in Quincy, however, public health administration will be organized under a State law on a permanent basis. Beginning at that time there will be available, annually, a sum of from $20,000 to $40,000, depending upon the tax assessment, that can be used for public health purposes only. The State law provides adequately for efficient personnel and equipment. The new administration will also be removed largely from the influence of local politics.

The city maintains no public nursing system whatever. Milk and food inspection is left entirely to the infrequent visits of State inspectors. School children are without medical inspection; neither nurse nor physician is employed for this important work. The city provides pest houses for contagious disease patients but no hospital facilities are available for them.

Extra-governmental agencies maintain two full-time nurses who do visiting nursing throughout the city. There is also a county tuberculosis nurse paid by the Red Cross but she spends very little time or effort in Quincy.

The county maintains a splendid tuberculosis sanitarium located about two miles out of Quincy. The plant is a magnificent institution but its value and importance seems not to have been fully appreciated by the citizens of Quincy and the county.

FINANCIAL TREATMENT.

During the past four fiscal years the expenditures by municipal government for fire, police and health protection have been as follows:

TABLE 22—FOR THE FISCAL YEAR ENDING APRIL, 30.

	1917	1918	1919	1920
Fire Department	$51,332.78	$51,429.09	$66,539.31	$78,384.74
Police Department	35,936.51	40,768.89	42,739.51	56,757.51
Health Department	6,767.57	2,762.94	4,020.00	3,395.26

The expenditures listed in the table indicate that fire and police protection have been practically considered of much greater importance than health protection. The figures are taken from the official annual report of the city of Quincy. The average annual expenditure during the four years for the fire department was $61,921.53; for the police department $44,050.02; for the health department $4,236.44. These totals correspond to an average annual per capita expenditure for the three departments as follows:

TABLE 23—AVERAGE ANNUAL PER CAPITA EXPENDITURE.

Fire department	$1.72
Police department	1.22
Health department	.11

Extra-governmental agencies have been spending approximately $5,000 per annum during the same period.

Estimates of the tax levy for health work in the future indicate that about $18,000, or approximately 50 cents per capita, will be available for the new health department at its inauguration next spring.

BIRTHS.

A part of the sanitary and health survey in Quincy dealt with birth registration. In the course of the house-to-house canvass incident to the survey it was determined that births are being reported about 98 per cent complete. Figures for the calendar years 1916-1919 inclusive show births reported as indicated in the following table. The table gives also the birth rates per 1,000 of population based upon a population of 35,978.

TABLE 24.

	1916	1917	1918	1919
Number of births	567	567	618	536
Rate per 1,000 population	15	15	17	14

The figures in the table indicate an average annual birth rate slightly more than 15 per 1,000 population or an increase in population from births of about 1.5 per cent.

The table below shows the number of births reported and the average annual birth rate per 1,000 population by wards. It also gives totals of births and rates for the city for the years indicated.

TABLE 25—BIRTHS BY WARD AND YEAR AND ANNUAL BIRTH RATE.

Ward.	1916	1917	1918	1919	Total.	Average annual birth rate.
1	74	94	77	67	312	15.9
2	54	42	59	44	199	10.6
3	69	83	86	84	322	17.2
4	99	114	115	97	425	17.0
5	104	95	114	100	413	15.8
6	120	102	115	98	435	17.9
7	47	37	52	46	182	15.4
Total	567	567	618	536	2,288	
Annual rate	15.7	15.7	17.1	14.8		15.8

A comparison shows that the birth rate in Quincy falls noticeably short of that which prevails in some other Illinois cities of similar size and character. During the same period when Quincy had a rate of 15.8, Alton had 22.8, Decatur 19.7 and Moline 19.5. Still more significant is the fact that while Quincy had an exceptionally low birth rate she had a death rate higher than that of Illinois cities generally. Facts about mortality appear elsewhere in this report.

INFANT MORTALITY.

The infant mortality rate in Quincy has averaged considerably less than that for the United States Registration Area during the years

1916-1919, inclusive. This may be accounted for in part, however, because of a completeness in registration of births in Quincy that is rather exceptional.

The table below indicates the number of deaths of infants under one year of age and the death rate per 1,000 of births for the years considered.

TABLE 26—NUMBER OF DEATHS UNDER ONE AND ANNUAL RATE.

(Exclusive of stillbirths)

	1916	1917	1918	1919	Total.
Number of deaths	56	46	57	37	196
Rate per 1,000 births	98.7	81.1	92.2	69	85.6

The figures in the table show that infant deaths fluctuate from year to year with the various influences that affect the lives of babies. At present Quincy supports no infant welfare stations and but little work is now being done upon the lines of infant welfare.

The table below gives the number of deaths and the average annual death rates of infants under one year of age by wards for the years considered:

TABLE 27—INFANT DEATHS AND DEATH RATES BY WARDS AND YEARS.

(Exclusive of stillbirths).

Ward.	1916	1917	1918	1919	Total.	Average annual rate.
1	5	6	10	3	24	76.9
2	9	3	6	1	19	95.4
3	2	7	10	5	24	74.5
4	7	15	10	6	38	89.4
5	20	5	10	10	45	108.9
6	11	6	5	10	32	73.5
7	2	4	6	2	14	76.9
Total	56	46	57	37	196	----------
Annual rate	98.7	81.1	92.2	69	----------	85.6

The cause of death of the babies in Quincy shows that the influenza pandemic affected infants but little in a direct way. On the other hand the high infant mortality rate that prevailed in 1918 brings out the point that the conditions of parents and adults influence the health and lives of babies to a much larger extent than is commonly recognized.

The table below gives the causes of death of infants in Quincy during the years 1916-1919 inclusive. The classification is that of the International List of Causes of Death:

TABLE 28—CAUSES OF INFANT DEATHS UNDER ONE YEAR.

Cause of death.	1916	1917	1918	1919	Total.
Diarrhea and enteritis	3	8	6	4	21
Congenital debility and malformation	31	19	36	18	104
Pneumonia	4	3	2	1	10
Broncho pneumonia	4	1	0	6	11
Acute bronchitis	4	3	3	1	11
Influenza	1	1	2	3	7
Measles	1	0	0	0	1
Disease of larynx	1	0	0	1	2
Syphlis	0	0	2	0	2
Sudden death	3	3	1	0	7
Convulsions of infants	1	2	0	1	4
Diphtheria	1	1	0	0	2
Disease of heart	0	1	0	0	1
Meningitis	1	0	0	0	1
Disease of stomach	1	0	1	0	2
Other diseases	0	4	4	2	10
All causes	56	46	57	37	196

Diarrhea and enteritis are shown first in the table because they are considered as positively preventable. An experiment over a period of several years in Richmond, Virginia, and two exhaustive experiments in New York City have unquestionably proved that diarrhea and enteritis in infants are closely connected with the prevalence of house flies and filth. In the Richmond experiment illness and mortality due to diarrhea were reduced in a direct ratio to fly extermination. The same results were obtained in New York City where two city blocks, almost identical in size and character of population, were selected for study. It is also well known that deaths among infants from diarrhea vary directly with the fly seasons. Deaths from these causes begin to increase with the coming of spring and reach a maximum in August when the fly is found in the greatest numbers.

The number of deaths caused by congenital debility and malformation leads the list. This frightful mortality arises largely from ignorance on the part of prospective mothers and a lack of prenatal care.

All the other causes listed are largely preventable. Indeed there is the instance of a certain city in Alsace-Lorraine where infant welfare developed to the point that for periods of more than a year no deaths occurred among infants. Even in our own country there are large numbers of instances where cities have reduced infant mortality by half and in some cases by two-thirds. These examples are proof enough that infant deaths are a waste of human life that can certainly be saved by means of efficient infant welfare service.

One of the most essential prerequisites to efficient infant welfare service is complete and prompt registration of births. This is true because complete birth reports inform the health department of all cases where assistance of one kind or another may be needed to preserve the life and health of mother and child. Immediate reports inform the health department of births at the time when assistance is most valuable.

Early and proper care of infants not only greatly increases the babies' chances for life but also for health. A large percentage of blindness, for example, can be prevented by the use of silver nitrate solution at birth. Other important means for increasing the prospects of infants for health and happiness are at the disposal of an adequate health department. Therefore, it is of especial importance that physicians should be encouraged in making prompt and complete birth reports to the end that all the medical forces of the community may closely cooperate in the great work of preserving life and promoting health.

MORBIDITY.

Communicable diseases, with a few exceptions, appear to be reported fairly completely in Quincy. This conclusion is reached after rather careful estimates based on death records from certain diseases. The most important exceptions to the approximately complete reporting are pneumonia, venereal diseases and tuberculosis.

In the case of pneumonia and tuberculosis the number of deaths in a year is generally greater than the number of cases of these diseases reported. The very limited venereal disease incidence reported in Quincy compared with that in various other Illinois cities would seem to indicate a disparity of reports.

There is also the exception of light or apparently insignificant cases of communicable diseases that escape the record books. During the survey, for example, there was a widespread wave of something like dysentery that carried with it, in severe cases, characteristics of typhoid or paratyphoid fever. It was variously diagnosed by local physicians who called it dysentery, summer cholera, paratyphoid, etc. Indeed there were some ten or twelve cases of typical typhoid fever that followed closely upon the heels of the less serious epidemic.

A study of local records dating back to 1912 indicates that the more common of communicable diseases such as diphtheria, scarlet fever, smallpox, measles, etc., have usually been allowed to run their course after making their appearance in the city. This is due, no doubt, to the fact that the health department has never been sufficiently manned to cope properly with the health problems of the city and the salaries paid have not been sufficiently large to attract men able to carry out epidemiological investigations.

The table below shows the number of cases of certain diseases that have been reported since 1912:

TABLE 29—CERTAIN DISEASES REPORTED IN QUINCY BY YEARS.

Diseases.	1912	1913	1914	1915	1916	1917	1918	1919	1920*	Total.
Smallpox	21	5	115	216	2	59	243	11	27	699
Measles	4	28	3	0	815	190	191	10	10	1,251
Chickenpox (not reported prior to 1915)	------	------	------	17	54	39	19	23	39	191
Whooping cough (not reported prior 1918)	------	------	------	------	------	------	95	41	14	150
Diphtheria	49	41	22	26	45	71	63	30	24	369
Scarlet fever	4	1	4	5	7	22	19	76	69	207
Typhoid fever	1	15	41	7	7	18	16	13	2	120

* Reports for 1920 include first 10 months only.

The table above does not include a large number of influenza cases that were reported in 1918. Pneumonia and tuberculosis do not appear in the table because reports were insignificant compared with the number of deaths from these causes.

While the number of cases of the various diseases reported, as indicated in the table, doubtless falls considerably short of the actual incidence in the several cases, yet these figures serve to show that little preventive steps have been taken to eliminate them from the city. Strict quarantine and exhaustive epidemiological work are essential to prevent the appearance and spread of communicable disease. It is of little or no value to have complete reports of communicable disease incidence unless the information thus acquired is utilized as a guide for effort that will safeguard the community against the spread and recurrence of such diseases. On the other hand a health department is like a ship at sea without a rudder when it attempts to function without prompt and complete reports of communicable disease incidence. Progress in community health promotion and disease prevention depends very largely upon the active cooperation of the local health department with the medical profession and there is every reason to believe that such cooperation can be readily obtained in Quincy.

GENERAL MORTALITY.

Mortality from all causes among residents only in Quincy appears to be slightly in excess of that in Moline, Illinois, a city similar in size, character and location. It also appears to be considerably higher than the rate for the State of Illinois and slightly higher than that for the United States Registration Area regardless of the fact that both residents and non-residents are considered in the two latter instances.

TABLE 30—DEATH RATES FROM ALL CAUSES PER 1,000 POPULATION.

Year.	1916	1917	1918	1919	Average.
Quincy (Number deaths	553	512	650	401	----------
Quincy (Rate	15.3	14.2	18	11.1	14.6
Moline rate only	----------	11.2	17.5	11.3	13.3
Illinois rate only	13.2	13.8	16.3	12.0	13.8
U. S. Registration Area rate only	13.9	14.0	18.0	----------	15.3

The average rate, as shown in the table, is higher for Quincy than for any of the other units except the United States Registration Area. In the case of the latter, figures for 1919 are not available so that this unit has the disadvantage of a high rate for 1918, resulting from influenza, and is unable to offset the increased rate by a decidedly lower rate in 1919 as is the case with the other units.

The rather excessive death rate in Quincy as compared with the other units listed in the table above may be somewhat explained by the fact that several institutions for old people are located there. These institutions accept applicants from various parts of the country and while some of those admitted become citizens of Quincy, still the system results in segregating the aged and consequently influences somewhat the local death rate. However, this influence over the general death rate becomes almost negligible when the number of deaths are considered with reference to age. A little more than 45 per cent of the deaths in Quincy during the four years studied occurred among citizens under 50 years of age.

A serious feature of the rather excessive death rate in Quincy is that it almost offsets entirely the increase in population from births. The table below compares the number of births and deaths that occurred among residents in Quincy during the four year period 1916-1919:

TABLE 31—NUMBER OF BIRTHS AND DEATHS, RATES PER 1,000 POPULATION.

Year.	1916	1917	1918	1919	Total.
Number of births	567	567	618	536	2,288
Number of deaths	553	512	650	401	2,116
Birth rate	15.7	15.7	17.1	14.8	----------
Death rate	15.3	14.2	18	11.1	----------
Average annual birth rate for period	----------	----------	----------	----------	15.8
Average annual death rate for period	----------	----------	----------	----------	14.6

The table shows that the population in Quincy increased from births at the rate of 1.6 per cent over a period of four years and that it decreased from deaths at the rate of 1.5 per cent during the same period. In other words there were only 172 more persons born than died among the residents of the city in four years. This would make an average yearly increase in population from births of only 43.

Perhaps the most serious feature of these facts is that a large percentage of the deaths have occurred among citizens less than fifty years of age and from causes largely preventable. It would seem that these facts alone would completely justify the action of the community in establishing a public health district and in the preparation for a first class public health administration. Money and effort can be spent to no greater advantage in Quincy than to the end of reducing the excessive death rate and decreasing communicable disease incidence.

The principal causes of death in Quincy are shown in the table below. The number of deaths from the various causes listed are shown by years and by totals for the period studied:

TABLE 32.

PRINCIPAL CAUSES OF DEATH.

Cause of death.	1916	1917	1918	1919	Total.
Organic heart disease	82	68	79	57	286
Pneumonia (all forms)	60	53	57	30	233
Tuberculosis (all forms)	66	39	53	38	196
Influenza	13	14	119	22	168
Cerebral hemorrhage	33	43	34	38	148
Cancer (all forms)	35	27	44	35	141
Bright's disease	29	39	29	19	116
Congenital debility and malformation	25	21	31	16	93
Accidents	14	13	19	16	64
Diarrhea and enteritis	11	15	14	9	49
Bronchitis (all forms)	14	13	14	5	46
Diabetes	14	12	12	5	43
Senility	11	14	9	4	38
Cirrhosis of liver	6	7	10	7	30
Diphtheria	6	7	6	3	22
Suicide	8	6	4	4	22
Intestinal obstruction	3	5	7	4	19
Disability peculiar to infancy	7	1	5	3	16
Syphilis	5	5	4	2	16
Measles	11	1	3	0	15
Typhoid fever	2	6	2	3	13
Appendicitis	3	2	3	3	11
Paralysis	2	2	4	1	9
Puerperal septicemia	2	2	2	1	7
Meningitis	2	4	0	1	7
Alcoholism	6	1	0	0	7
Peritonitis	5	2	0	0	7
Whooping cough	0	1	2	3	6
Scarlet fever	0	0	2	1	3
All other causes	67	87	91	69	314
Total	475	423	568	330	1,831

Of the causes of death listed in the table above a large percentage are recognized as absolutely preventable while a still larger percentage are recognized as very largely preventable. The tables below show the number of deaths caused by these classes of diseases:

TABLE 33—PREVENTABLE DEATHS.

	No. of deaths 1916–1919, inclusive.
Tuberculosis (all forms)	196
Diarrhea and enteritis	49
Diphtheria	22
Syphilis and locomotor ataxia	16
Measles	15
Typhoid fever	13
Whooping cough	6
Scarlet fever	3
Total these causes	320

The 320 deaths caused by these preventable diseases correspond to a little more than 15 per cent of the total number of deaths among the residents of Quincy from all causes during the period studied.

The number of deaths caused by diseases that are largely preventable are shown below:

TABLE 34—DEATHS FROM CERTAIN CAUSES—LARGELY PREVENTABLE.

	No. of deaths 1916–1919, inclusive.
Pneumonia	223
Influenza	168
Congenital debility and malformation	93
Accidents	64
Bronchitis (all forms)	47
Total these causes	595

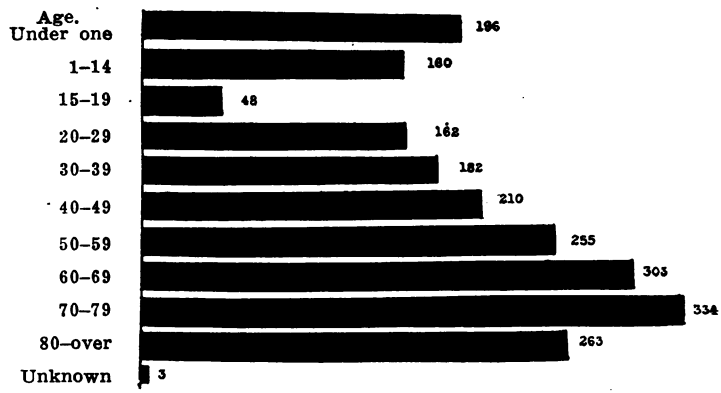

Figure XXVII—Number of deaths among residents of Quincy from 1916 to 1919, inclusive, according to age.

Note the very severe losses among the young citizenship of the community as indicated by the three columns showing the number of deaths between twenty and fifty years of age.

Note also the heavy infant mortality indicated by the first column.

The deaths indicated in the table above were very largely preventable and correspond to a little more than 28 per cent of the total number of deaths from all causes during the period considered.

If the number of deaths due to positively preventable causes be added to those from causes largely preventable there is a total of 915 deaths or a little more than 43 per cent of the total number of deaths that occurred among residents of Quincy from all causes during the four year period 1916-1919 inclusive. In other words almost half the deaths that have occurred during the four year period resulted from preventable causes.

It is also food for thought to know that 748 of the 2,116 residents of Quincy who have died during the four year period had not reached their fortieth year. Instead of living out the allotted "three score years and ten" these 748, or more than 35 per cent of the total number of deaths, failed to reach two score years.

If the number of deaths among people under fifty years be considered it is found that 958 out of the total of 2,116 were in this class. This means that 45 per cent of the total number of residents who died in Quincy during the four years (1916-1919) fell short a score or more of years from the allotted span of human life. These facts are indeed

worthy of the serious attention and the thoughtful consideration of the citizens of the community.

Full significance of the high death rate comes only when it is considered relative to the birth rate and from an economic standpoint. Elsewhere in this report it is shown that the death rate in Quincy almost overshadows the birth rate. If each life under fifty years were valued at $2,000 the total loss from deaths alone would amount to $958,000 in the four years considered. These figures correspond to an annual loss of $239,500 or nearly a quarter of a million dollars. A large per cent of this loss can surely be salvaged since almost all deaths under fifty result from preventable causes.

Another feature of the economic loss incurred from preventable disease finds expression in the loss of time to the patient from these causes. This is scarcely more important than expenses incidental to medical and nursing care during illness and funeral expenses in fatal cases. Again, to the loss of wages or salary to the patient sick from a preventable disease must be added the loss of his service to his employer. Indeed the commercial and industrial lives of our people are so completely interdependent today that the financial expense and loss incurred by the sickness of one wage earner continues to grow and spread its influence until the entire community in which he lives suffers a monetary loss greatly in excess of that of the individual. When considered in this larger sense the annual cost to a community of a few hundred cases of preventable sickness, whether fatal or not, reaches a total sum that is staggering to the senses. To prevent all communicable disease is still a utopian dream but practical experience has proved that an unlimited amount of these diseases can be prevented.

One remarkable example of what practical preventive medicine can do is found in the results obtained among our troops during the World War. Among United States troops during the Spanish-American War 1,600 out of every 10,000 (or 16 out of every 100) contracted typhoid fever. The mortality was frightful. During the World War when several million more men were under arms only 5 out of every 10,000 came down with typhoid in this country and only 16 out of every 10,000 in France. This great reduction in typhoid fever incidence among troops resulted from better sanitary conditions around the camps coupled with the use of typhoid vaccine.

What was true of typhoid fever among our troops in the World War was true of all other communicable diseases. The army as a whole suffered from no epidemics with the single exception of influenza that affected soldier and private citizen alike.

Examples like this surely prove that communities under normal conditions in times of peace can accomplish like results by the use of like methods. Money and effort properly spent in the prevention of com-

Figure XXVIII—Note fly-breeding manure pile and numerous outside privies. Picture taken a little southeast of St. Vincent Home.

Figure XXIX—Note garbage and filth scattered about an open garbage can. Picture taken in block opposite city hall.

municable disease will certainly pay big dividends not alone in money but in health and happiness as well.

GENERAL SANITATION.

The foundation for good community health is good community sanitation. This arises from the fact that the human body naturally tends to preserve its life and prolong its existence by throwing off all malevolent substances that may accumulate in it. These substances that tend to poison life and cause sickness, when retained in the body, are expelled through various channels as excreta. It is a simple conclusion that these things, harmful to one person, will create an injury when taken into the body of another person. All insanitary conditions that tend to make difficult the disposal of these harmful and poisonous excreta in a manner beyond the possibility of their coming into the mouth of another person will help to cause disease.

The chief item of excreta disposal is that of fecal matter. This problem becomes more complicated by reason of the many agencies that join hands in an effort to carry this fecal matter from one person to the mouth of another. Among these agencies are soiled hands that handle food; privy vaults that pollute drinking water and furnish breeding places for flies and various vermin; rubbish and filth that harbor rats and other rodents; unsatisfactory garbage disposal that furnish feeding and breeding places for flies, other insects and vermin; insanitary stables where flies breed abundantly and where rats live and multiply. In seeking the cause of community ill health it is, therefore, well to look carefully into the sanitary conditions of that community.

PRIVIES.

The outstanding feature in the prevailing insanitary conditions of Quincy is the exceptionally large number of outside privy vaults found in all parts of the city. In all there are 4,548 or one privy for every seven people in the city. Uncomplimentary as it may seem the facts show that Quincy now maintains more privy vaults per capita than any other city where exhaustive sanitary studies have been made by the State Department of Public Health.

The reasons for eliminating and prohibiting the maintenance of privy vaults in a city are too well known to require space here. That they are breeding places for various vermin, favorite feeding places for the common house fly and altogether lacking in establishing the convenience for which they were created are facts of common knowledge. That diseases of the digestive system and especially typhoid fever and diarrheal diseases are easily and rapidly spread through the agency of the privy, coupled with surface drainage and the fly are also well known truths. These facts alone without adding the unfavorable moral effects on the young and the more indirect effect on health caused by the inaccessible nature of the privy at night and in stormy weather are enough

Figure XXX—Note open manure piles with evidence of infrequent attention. These are first class breeding places for flies and harbor rodents and other vermin. Building in background is city hall.

Figure XXXI—Note open manure piles in alley. Picture taken a few blocks northwest of city hall.

Figure XXXII—Note garbage, filth and ashes. Picture taken in block bounded by Maine, Hampshire, Fifth and Sixth.

to warrant its elimination. The indictment against the privy as an enemy of health and happiness is so unquestionably established and the evidence is so completely incriminating that Quincy would be generously justified in waging a ceaseless war against this public nuisance until the last privy is banished from the city.

MILK AND FOOD.

The matter of milk and food inspection is seriously neglected in Quincy. A large part of the milk supply is not pasteurized and none of it is inspected. Food inspection is largely left to the infrequent visits of State officers. Many food products and especially fruits and vegetables are kept in open cases and along the sidewalks where they are subject to flies and insects. These products are also unprotected against careless handling, coughing, sneezing and spitting by the public.

That the production, handling and consumption of milk and food products establishes a channel through which communicable diseases may easily and rapidly pass from one person to another is scarcely to be questioned. New York City found that deaths among infants less than one year of age have been reduced from 241 out of 1,000 in 1891 to 81 in 1919. The commissioner of health credits this reduction very largely to the general pasteurization and inspection of milk that was begun in 1892. The careful supervision over food products is attended with like results. It is, therefore, of the greatest importance that a thoroughly adequate and efficient system of inspection be established in Quincy.

RATS.

The rat menace is another important feature in the prevailing sanitary conditions of Quincy. This is encouraged by the lack of rat proofing in buildings generally and especially by reason of the large number of barns and various out-houses of similar character. It is of especial importance that the matter of rat extermination and rat proofing of buildings be given serious thought at this time since a number of cases of bubonic plague have been reported recently at various gulf ports. Plague is usually transmitted by rats and other rodents and the natural course for the disease to follow would be from the gulf ports, by means of the river traffic, up the Mississippi River to the various river cities. It is, therefore, not beyond the realm of possibility for this disease to gain a footing in Quincy, and the results of such a footing under the local climatic conditions are not at all reassuring to think about.

STABLE AND MANURE.

Stables and stable manure were found in numbers sufficient to attract considerable attention from a sanitary standpoint. Altogether there are 961 stables in the city and out of this number 400 accommodate horses or cows or both. With very few exceptions manure is allowed to accumulate in the stables or else it is piled in the lot or alley and is

Figure XXXIII—Found between Fifth, Sixth, Maine and Hampshire.

Figure XXXIV—The way garbage is kept in block opposite city hall.

Figure XXXV—Another picture of "Adams Row."

Figure XXXVI—In a first ward alley.

hauled away at infrequent intervals. The most serious objection to this practice is that manure piles are the prolific breeding places of flies. During the sanitary survey flies were found in great abundance in many sections of the city and it was quite noticeable that they were especially numerous in neighborhoods adjacent to filthy dumps and insanitary stables. It was also very noticeable that flies infest the homes of the less financially able who are, above all others, less able to withstand the evil effects inaugurated by the fly pest. The only way to destroy the fly pest is to destroy the fly and that can be accomplished in no other way than to remove all breeding places that are likely to accommodate him.

GARBAGE.

The matter of garbage collection and disposal seems to be decidedly unsatisfactory. The local inspectors reported 284 instances where garbage was either thrown into the alley with rubbish, dumped into an abandoned cistern or thrown into the yard in an insanitary manner. Complaints of infrequent collections were quite general throughout the entire survey. Behind one of the leading restaurants two open barrels were kept for garbage receptacles. They were housed in a space used for preparing foods. These quarters were fairly alive with industrious flies that busied themselves with frequent trips from the garbage barrels to food articles, many of which were ready to serve. Similar conditions were true in many other places on a smaller scale. Very few places were found where garbage receptacles were properly covered and where frequent collections were made.

HOME CONDITIONS.

During the house-to-house canvass 959 conditions were reported that needed immediate attention from a sanitary standpoint. These conditions were all inclusive in character and related to matters of garbage disposal, manure disposal, insanitary privies, defective plumbing, sewage disposal, etc.

WELLS AND CISTERNS.

Fortunately Quincy has very few shallow wells, there being but 48 in all. On the other hand there are 3,659 cisterns but these become a menace to health only when the water therefrom is used for drinking purposes and then only in cases where the cisterns are not properly protected against contamination by surface drainage and other foreign substances. Several cisterns were found that were not properly protected.

GENERAL CONDITIONS.

In most of the down town business districts the merchants and apartment residents habitually keep large and unsightly piles of rubbish, often mixed with garbage, in the back lot. These seem to be largely the result of infrequent inspections since every case found by the State

Figure XXXVII—Note proximity of privy, well and dwelling. Picture of "Adams Row."

Figure XXXVIII—Note garbage and other filth scattered in alley. Picture taken in second ward.

Figure XXXIX—Note kind of stable where flies breed prolifically. Picture taken in first ward.

officials was readily corrected when the attention of the responsible people were called to it.

Vacant lots in the city serve quite often as semi-public or neighborhood dumps. This practice would be all right if properly supervised. There is no objections to filling in with rubbish if it is covered with soil to prevent the breeding of insects and rodents. Garbage disposal onto these dumps ought to be strictly prohibited.

Alleys generally were found in good condition. However, a feature of importance from a sanitary standpoint is that a rather large number of open garbage receptacles were found in the alleys and a considerable number of cases where garbage was dumped outright into the alley. These conditions seem to grow up because of infrequent inspection.

Poultry yards were found in large numbers in the city. They create a sanitary problem when not properly cleaned and when garbage of a nature not suitable for poultry food is thrown into the yard. Reports of these poultry yards show that they need a closer supervision by the sanitary officer.

The local inspectors visited 8,362 premises during the course of the survey. Each of these premises was rated from a sanitary basis as good, fair or bad. Slightly more than half the homes, or 4,690 were rated as good; 2,978, or slightly more than one-third of the homes were rated as fair; 694 premises, or about 8 per cent were classed as bad. Only those premises where the general sanitary conditions were such as to warrant prompt attention and a thorough cleaning were rated as "bad."

CONCLUSION.

From the outline of conditions set forth above it is apparent that Quincy is not at present properly protected against the appearance and the spread of communicable disease. Especially is this sort of protection noticeably lacking in connection with the school system. Milk and food inspection is also seriously neglected.

The general death rate in Quincy is excessive. Compared with other similar cities and with the State and the United States it is high. The high death rate among residents under fifty years of age attracts especial interest. Nearly half of all deaths that occur in Quincy are among citizens less than fifty. That the high death rate, and especially those deaths due to preventable causes, are directly and closely related to insanitary conditions and the lack of medical care in the schools and elsewhere is not doubted.

The general sanitary conditions are somewhat below the average for cities the size of Quincy. These conditions center around the large number of outside privy vaults found in all parts of the city. Other insanitary conditions are of a nature easily corrected but the elimination of the privy vaults from Quincy will require a prolonged and determined effort. Nothing short of a ceaseless warfare will rid the city of the privy nuisance.

Figure XL—Picture taken in City Hall block.

Figure XLI—Picture taken in block bounded by Maine, Hampshire, Fifth and Sixth.

Note general insanitary conditions.

Figure XLII—Picture taken in block opposite City Hall.

Figure XLIII—Picture taken between Maine, Hampshire, Sixth and Seventh.

Conditions like these harbor rodents and disease carrying insects.

Paramount in importance is the conclusion that Quincy has already taken a long stride in the direction of solving her sanitary and health problems. That the citizens have voted upon themselves a special tax for the purpose of creating an efficient and well equipped health department is worthy of the highest commendation. Active cooperation on the part of individuals and organizations in the city is the principal factor that will determine the successful functioning of the new public health administration.

RECOMMENDATIONS.

The first and most important recommendation deals with the personnel and organization of the health department. Upon this depends, to a greater degree than upon all other factors combined, the future success of public health administration in Quincy.

The organization should include the following minimum personnel:

(a) Commissioner of health—Physician.
(b) Medical assistant—Physician.
(c) Sanitary inspector.
(d) Milk and food inspector.
(e) Bacteriologist and chemist.
(f) Six nurses.
(g) Office assistant.

A man capable of efficiently discharging the duties of the office of health commissioner should be a physician trained and experienced in public health administration. He should have complete executive responsibility for all the functions and the policy of the health department.

The medical assistant to the commissioner should be a physician. He is especially essential in connection with the medical inspection and care of school children. One or more part time officials sometimes serve to advantage in this capacity.

The sanitary and the milk and food inspectors should be full time officers. Their work can be coordinated to advantage.

The bacteriologist and chemist is perhaps next in importance to the commissioner. His duties would include the analysis of milk, food and water specimens. He would also do the laboratory work connected with the diagnosis of communicable diseases.

The recommendation for six nurses is based upon the minimum personnel attached to public health organizations that are now doing creditable work in other cities. Two of these nurses should be attached to the commissioner's office while the other four would be engaged in school work. The New York City Health Commissioner recommends one school nurse for every thousand children, but with four nurses to begin the work in Quincy the health conditions among the school population ought to show a marked improvement.

SCHOOLS.

(a) Public health service in connection with schools is threefold. It suppresses and prevents epidemics of communicable disease; it cor-

rects physical disabilities such as the removal of tonsils and adenoids; it practically instructs the children in the essentials of how to keep well. It is recommended that four public health nurses and at least one physician be assigned to this important work.

(b) Pronounced beneficent results to indigent and backward pupils from dental, ocular, tonsilectomy and adenoidectomy service would seem to justify the establishment of clinics for these purposes. The recommendation is that the city install and equip these clinics and arrange with local professional men for the required clinical attention.

(c) It would seem that there are a sufficient number of pupils with tuberculosis in a quiescent stage to warrant the operation of open-air rooms. It is recommended that steps be taken to establish at least two open-air rooms. Arrangements could doubtless be made with local philanthropic agencies to furnish the additional clothing necessary in given cases while the school board would furnish the rooms and equipment.

INFANT WELFARE.

Infant welfare service is probably the most important single function of any local health department. Work in this field always results in the immediate and remarkable reduction in infant mortality.

It is recommended that three infant welfare stations be established. One of these should be centrally located; one should be held in the fourth ward near the South Park District and the third should be established in the sixth ward.

Quarters for the central station ought to be permanent and in conjunction with public health headquarters. For the other two, church or school rooms could be utilized.

ORDINANCES.

(a) It is recommended that the ordinance requiring property owners to install plumbing in their houses and connect with the sewers when accessible be revised and rigidly enforced. At present there is a laxity in the law that allows privies to be maintained on certain premises that ought rightfully to be prohibited.

(b) It is recommended that the ordinance which prohibits dumping on vacant lots be enforced.

(c) Stable manure is not properly handled to prevent fly breeding. It is strongly recommended that an ordinance be passed that will require frequent and proper disposal of manure.

(d) It is recommended that the ordinance requiring birth registration be revised to conform with the State law allowing only ten (10) days after birth instead of thirty in which to report.

COOPERATION.

(a) It is recommended that the health department encourage the close cooperation of the medical profession. This is especially necessary in the control of communicable disease and in extensive infant welfare service.

(b) It is recommended that the municipal and extra-governmental agencies cooperate closely in all public health matters.

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